TOA

AUDIO, INTERCOM, MASS NOTIFICATION & VOICE EVACUATION PRODUCT CATALOGUE

TOA Canada Corporation

1-800-263-7639
TOAcanada.com

TOA

We Supply Sound, Not Equipment. That's Our Corporate Philosophy.

Since being founded in 1934, as a manufacturer of commercial and professional audio equipment and security equipment, we have exported our products from Kobe to more than 100 countries throughout the world.

In every company within the TOA group, which consists of the main company and 19 subsidiaries, we utilize the technical expertise and know-how that we have accumulated throughout the years in every aspect of production, from product planning and development right through to sales and management.

We are constantly improving our technological capabilities in areas such as acoustics, graphics and networks, and developing innovative products in order to provide customers with the ultimate in good sound and peace of mind to help make their lives more comfortable.

Basic Management Policy (Three Confidence)

- Total confidence of our customers in the use of all products.
- Total confidence of our associates in all business transactions.
- Total confidence of our employees in all their effort.

TOA has acquired both ISO9001 quality assurance and ISO14001 environmental management certifications.

JMI-0020
ISO9001
- Head Office
- Takarazuka Headquarters
- Tokyo Branch
- Osaka Branch

JQA-EM1400
ISO14001
- Takarazuka Headquarters

TOA's Environmental Principles

TOA recognizes preservation of the Earth's environment as an important aspect of doing business in the world today. Our staff as a whole remains actively committed to pursuing all corporate activities in ways that give strong consideration to environmental protection.

Planning and Design Carried Out in Japan

Quality Assurance Through Product Design and Production Processes

The basis of our quality assurance activities is the product planning and design that is carried out primarily in Japan in response to market needs and in compliance with ISO9001:14001 standards. Our dedicated professional staff inspect products at every stage of the production process using their years of experience and their high levels of technological expertise.

Quality Control by TOA HQ

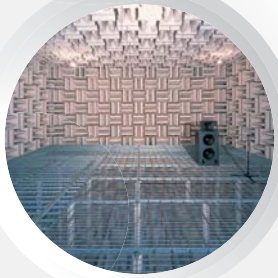
TOA production plants both within Japan and overseas are part of the TOA Group. Numerous technicians from Japan are sent to our overseas production plants where they use state-of-the-art equipment to produce products under the same stringent quality control system as is used in our production facilities in Japan. Furthermore, twice a year, staff from our Quality Control Division visit overseas production facilities to carry out inspections and ensure that quality standards are being maintained.

TOA CANADA CORPORATION

TOA Canada Corporation was formed in 1990 as a complete sound solutions provider, specializing in commercial audio, including, public address, voice communications, voice evacuation and emergency paging requirements. TOA Canada Corporation offers complete solutions for all corporate and commercial audio communications and intercom requirements.

TOA products range from digital amplifiers and speakers, to mixers, wireless microphone systems and digital processors used in sound reinforcement, to integrated IP intercom and emergency paging and voice evacuation systems for security and communications.

TOA Canada Corporation provides regional sales, technical support and warehousing from one convenient location.



TOA Advantage

Experience	• Over 80 years of experience • World leader in commercial & professional audio products • World renowned installations
Quality	• Most products have a FIVE year limited warranty • Reliable & Durable: best MTBF in the industry
Selection	• Broad product range for applications in Corporate & Commercial; Correctional Facilities; Education; Government & Hospitals; Halls & Theatres; Hospitality & Retail; Houses of Worship; Intercom; Sports Complexes; Transportation; Voice Evacuation & Mass Notification Systems.
Distribution	• Canadian stocking warehouse for products and service parts
Customer Service	• Canadian technical support & design team • Design consultation • Extensive field representation nationally • Monthly web-based training • Customized dealer sales & technical training
Commitment	• Competitively priced, quality products and the utmost in customer service.

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SYMBOL LEGEND

Network Connection Required · Network Connection Optional · PC & Software Required · PC & Software Optional · RS-232 Required · RS-232 Optional · iOS APP Available · USB Required

*NOTES: Specifications are subject to change without notice. Products may not appear exactly as shown. This Catalogue is intended as a reference only. Please refer to TOA's Corporate specification pages for the most up to date information. ** Special order product.*

Microphones

Dynamic Microphones

Unidirectional Microphone

DM-1300US

- Dynamic hand-held microphone for vocal/speech use
- Rigid diecast zinc microphone body
- Switching and handling noise suppression
- Microphone holder provided as standard accessory
- Balanced output for long distance connection

Model	DM-1300US
Type	Moving coil microphone (Dynamic microphone)
Directivity	Unidirectional: Cardioid
Rated Impedance	600 Ω, balanced
Rated Sensitivity	–54 dB (1k Hz 0 dB = 1 V/Pa)
Frequency Response	70 Hz – 15 kHz
Weight	245 g (0.54 lbs) (without connection cable)
Dimensions (W x H x D)	ø 51 x 170 mm (2" x 6.7")
Talk switch	Short-off type, slide on/off switch
Finish	Body: Die cast zinc, painted metallic gray, paint Head: Steel, zinc plated steel wire, painted metallic gray
Standard accessory	Microphone holder (NS5/8) x1, Thread adapter (NS5/8→U5/16 or (W3/8)) x 1

Paging Microphones

Paging Microphone

PM-660U

- Dynamic paging microphone without plug
- Large talk switch with locking lever
- Extra switch contact for mute or relay control
- Fitted with 2.5m, 2-core shielded cable without plug

Model	PM-660U
Rated Impedance	600 Ω, balanced
Rated Sensitivity	–58 dB (1 kHz, 0 dB = 1 V/Pa)
Frequency Response	100 Hz to 10 kHz
Remote Switch	Leaf spring contact (interlocked with talk switch), 30 V DC, under 500 mA
Finish	Head: Zinc plated steel wire, gray, paint Body: ABS resin, gray
Dimensions	100 (w) x 215 (h) x 150 (d) mm (3.94" x 8.46" x 5.91")
Weight	440 g (0.97 lb) (cable excluded)

Remote Microphone

Remote Microphone

Q-RM9012

- High-sensitivity electret-condenser gooseneck mic for clear voice
- 12 zone select buttons, All Call, Clear
- 12 Contact Outs corresponding to buttons (RJ-45 connector for use with shielded Cat5 wiring)
- Connects to C-IN on 9000M2 (mainframe & equipped with C-001T)
- Optional AD-246 AC Adapter required

For specifications and complete details see page 38

Condenser Microphones

Flush-Mount Boundary Microphone

EM-600

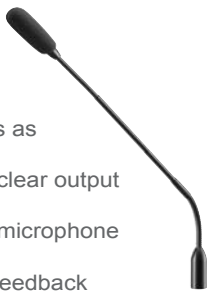
- Electret condenser microphone for conference room recording and security monitoring
- Wide frequency range (30Hz-20kHz) provides well-balanced sound with clarity and a satisfying tonal response
- Unobtrusive design allows easy flush-mounting in walls, ceilings, and desktops
- Optimized to deliver best performance when used on a desk or attached to a ceiling
- A low-cut filter reduces intrusive noise, such as air conditioner rumble or door opening/closing
- Two rubber isolation rings provided as an accessory serving to reduce vibration

Boundary Microphone

EM-700

- Electret condenser microphone for speech and recording applications
- Design, optimized to deliver best performance when used on a desk
- Slim, stylish design suits interior decor
- Rejection of undesirable off-axis sound minimizes possible feedback
- Low-cut filter switch prevents interference from ambient noise from being picked up
- Wide frequency range of 35 to 20 kHz provides well-balanced sound with clarity and a satisfying tonal response

Gooseneck Microphone



EM-800

- Electret condenser microphone for such speech applications as meetings, lectures, and religious services
- Excellent high-frequency response of 60 to 20k Hz delivers clear output
- High sensitivity (-35dB) provides a satisfying tonal response
- Gooseneck with two adjustment points allows more flexible microphone positioning angles
- Rejection of undesirable off-axis sound minimizes possible feedback

ST-800

For EM-800

(With microphone stand: ST-800)

Accessory Reference on page 102

Condenser Microphones

Model	EM-600	EM-700	EM-800
Directivity	Omnidirectional	Cardioid	
Rated Impedance	120 Ω, balanced		
Rated Sensitivity	–36 dB (1k Hz 0 dB = 1 V/Pa)	–33 dB (1k Hz 0 dB = 1 V/Pa)	–35 dB (1kHz 0 dB = 1 V/Pa)
Phantom power	9-52V DC (required for operation)		
Frequency Response	30 Hz – 20kHz	35 Hz – 20kHz	60 Hz – 20kHz
Output Connector	XLR-3-12 equivalent		
Finish	Body: Steel, white, semi-gloss, paint Head: Zinc-plated steel wire, white, semi-gloss, paint	Body: Die-cast aluminum, black, mat finish, paint Punched net: Surface-treated steel plate, black, mat finish, paint	Body, Shaft: Copper alloy, black,semi-gloss, paint
Dimensions	ø28 × 68mm (1.1" x 2.7")	83 (W) × 23 (H)× 83 (D)mm (3.2" x 0.9" x 3.2") (cord excluded)	ø12 × 420mm (0.5" x 16.5")
Weight	85 g (0.19 lb)	290 g (0.64 lb)	135 g (0.3 lb)
Accessory	Rubber Isolation Ring × 2, M20 Nut × 1	—	Windscreen × 1
Optional Stand	—		Microphone Stand: ST-800

Array Microphone

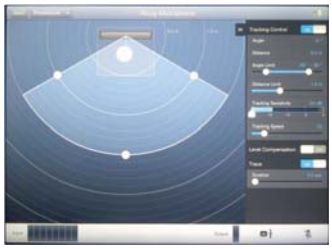
The Real-time Steering Array Microphone System, uses unique TOA technology to achieve the unique function of detecting the sound source location and steering its angle automatically in real-time to capture the targeted sound more efficiently. In addition, the special, user-friendly app and firmware allow the user to monitor the status of the sound source tracking and make changes to its setting parameters with an iPad. With this technology, the presenter would no longer need to be "microphone-conscious" to get a uniform sound level while speaking and moving.

»Real-time Steering Array Microphone

AM-1MBQAM

- Detect sound source location and steer its beam angle automatically to focus on that sound source
- Improved signal to noise characteristics
- The dedicated user-friendly GUI is available as an App for iPad for monitoring and setting the following key items:
  - Real time monitoring:
    - Detection of sound source location
    - Signal level of 8 individual microphone elements
  - Parameter settings:
    - Tracking range (Horizontal angle and distance), sensitivity, speed
    - Gain compensation ON/OFF, Distance adjustment threshold
    - Duration (Time monitoring of sound source footprint)
    - Mute ON/OFF operation
    - Disabling of MUTE switch function on the microphone
    - Output gain level adjustment

»Software GUI



Model	AM-1MBQAM
Power Source	24DCV 200mA (supplied from Control Unit)
Frequency Response	150 Hz to 18 kHz
Directivity (Beam Width)	50°
Maximum Cable Distance	200ft / 60m (between microphone and control)
Applicable Cable	Twisted two-core, shielded cable
Mute Function	Mechanical mute switch
Dimensions	0.75" (w) x 0.031" (h) x 150 (d) mm (19.1" x 0.78" x 0.094")

»Control Unit

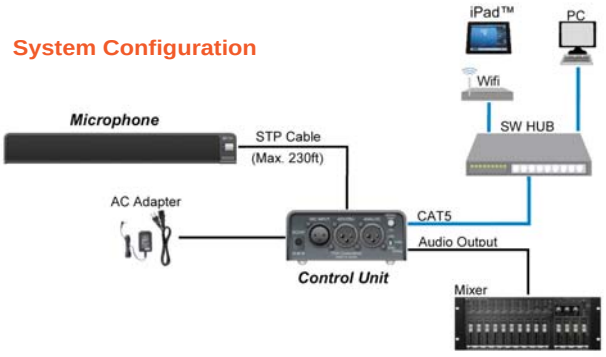
AM-1CQAM

Front Panel

Rear Panel

Model	AM-1CQAM
Power Source	24DCV 400mA (including microphone power / supplied by AC adapter)
S/N (Microphone)	Over 90 dB
Input	Microphone input (audio and communication), female XLR 3P x1
Audio Output	+4dBμ/-10dBV (selectable), male XLR 3P x 2 AES/EBU 24 bit 110Ω, male XLR 3P x 1
Network Port	RJ45
Accessory	AC adapter

System Configuration



»Real-time Steering Array Microphone System Set

AM-1SET

Includes; AM-1MBQAM Real-time Steering Array Microphone, AM-1CQAM - Control Unit and an AD-246 AC adapter

Wireless Systems

Wireless Microphone Ordering Information

Model / Description	E Band: 668 - 698 MHz Part Number	F Band: 636 - 668 MHz Part Number	G Band: 606 - 636 MHz Part Number	H Band: 576 - 606 MHz Part Number
TRANTEC S5.5 Series 24 Channel Wireless Solution				
KITS				
S5.5-HD - Handheld Dynamic Kit		S5.5-HD-F1USQ		
S5.5-HC - Handheld Condenser Kit		S5.5-HC-F1USQ		
S5.5-L - Lavaliere Kit		S5.5-L-F1US Q		
INDIVIDUAL UNITS				
S5.5-RX - Receiver		S5.5-RX-F1 Q		
S5.5-HDX - Handheld Dynamic Mic		S5.5-HDX-F1 Q		
S5.5-HCX - Handheld Condenser Mic		S5.5-HCX-F1 Q		
S5.5-BTX - Beltpack		S5.5-RX-F1 Q		
TRANTEC S5.3 Series 12 Channel Wireless Solution				
KITS				
S5.3-HD - Handheld Dynamic Kit	S5.3-HD-E2USQ	S5.3-HD-F2USQ	S5.3-HD-G7USQ	S5.3-HD-H2USQ
S5.3-HC - Handheld Condenser Kit	S5.3-HC-E2USQ	S5.3-HC-F2USQ	S5.3-HC-G7USQ	S5.3-HC-H2USQ
S5.3-L - Lavaliere Kit	S5.3-L-E2US Q	S5.3-L-F2US Q	S5.3-L-G7US Q	S5.3-L-H2US Q
INDIVIDUAL UNITS				
S5.3-RX - Receiver	S5.3-RX-E2 Q	S5.3-RX-F2 Q	S5.3-RX-G7 Q	S5.3-RX-H2 Q
S5.3-HDX - Handheld Dynamic Mic	S5.3-HDX-E2 Q	S5.3-HDX-F2 Q	S5.3-HDX-G7 Q	S5.3-HDX-H2 Q
S5.3-HCX - Handheld Condenser Mic	S5.3-HCX-E2 Q	S5.3-HCX-F2 Q	S5.3-HCX-G7 Q	S5.3-HCX-H2 Q
S5.3-BTX - Beltpack	S5.3-BTX-E2 Q	S5.3-BTX-F2 Q	S5.3-BTX-G7 Q	S5.3-BTX-H2 Q
TOA 5000 Series 16 Channel Wireless Solution				
KITS				
WS-5225 - Handheld Condenser Kit	WS-5225 E01US	WS-5225 F01US	WS-5225 G02US	WS-5225 H01US
WS-5265 - Handheld Dynamic Kit	WS-5265 E01US	WS-5265 F01US	WS-5265 G02US	WS-5265 H01US
WS-5325U - Lavaliere (uni) Kit	WS-5325U E01US	WS-5325U F01US	WS-5325U G02US	WS-5325U H01US
WS-5325M - Lavaliere (omni) Kit	WS-5325M E01US	WS-5325M F01US	WS-5325M G02US	WS-5325M H01US
WS-5325H - Headworn (uni) Kit	WS-5325H E01US	WS-5325H F01US	WS-5325H G02US	WS-5325H H01US
INDIVIDUAL UNITS				
WT-5800 - Receiver	WT-5800 E01US	WT-5800 F01US	WT-5800 G02US	WT-5800 H01US
WT-5805 - Receiver	WT-5805 E01US	WT-5805 F01US	WT-5805 G02US	WT-5805 H01US
WT-5810 - Receiver	WT-5810 E01US	WT-5810 F01US	WT-5810 G02US	WT-5810 H01US
WT-4820 US - Receiver *(add WTU-4800)*				
WTU-4800 - Receiver Unit	WTU-4800 E01	WTU-4800 F01	WTU-4800 G02	WTU-4800 H01
WM-5270 - Handheld Dynamic Mic	WM-5270 E01	WM-5270 F01	WM-5270 G02	WM-5270 H01
WM-5265 - Handheld Dynamic Mic	WM-5265 E01	WM-5265 F01	WM-5265 G02	WM-5265 H01
WM-5225 - Handheld Electret Mic	WM-5225 E01	WM-5225 F01	WM-5225 G02	WM-5225 H01
WM-5325 - Beltpack	WM-5325 E01	WM-5325 F01	WM-5325 G02	WM-5325 H01
TRANTEC S4.16 Series 12 Channel Wireless Solution *(Note: G band supports 8 channels)*				
KITS				
S4.16H - Handheld Dynamic Kit	S4.16-H-E3-USQ		S4.16-H-G4-USQ	
S4.16L - Lavaliere Kit	S4.16-L-E3-USQ		S4.16-L-G4-USQ	
INDIVIDUAL UNITS				
S4.16-RX - Receiver	S4.16-RX-E3 Q		S4.16-RX-G4 Q	
S4.16-HDX - Handheld Dynamic Mic	S4.16-HDX-E3Q		S4.16-HDX-G4Q	
S4.16-BTX - Beltpack	S4.16-BTX-E3Q		S4.16-BTX-G4Q	
TRANTEC S4.4 Series Wireless Starter Pack				
KITS				
S4.4H - Handheld Dynamic Kit	S4.4-H-E4-US Q		S4.4-H-G5-US Q	
S4.4L - Lavaliere Kit	S4.4-L-E4-US Q		S4.4-L-G5-US Q	
INDIVIDUAL UNITS				
S4.4-RX - Receiver	S4.4-RX-E4 Q		S4.4-RX-G5 Q	
S4.4-HDX - Handheld Dynamic Mic	S4.4-HDX-E4 Q		S4.4-HDX-G5 Q	
S4.4-BTX - Beltpack	S4.4-BTX-E4 Q		S4.4-BTX-G5 Q	

Accessory Reference on page 102.

Wireless Microphone Selection Guide

TOA 5000 Series Wireless Microphone Selection Guide

Description	Model	Replaces	Compatible With
Handheld Wireless Microphones			
Handheld microphone, condenser, unidirectional	WM-5225	WM-5220	Receiver: WT-5800; WT-5805; WT-5810; WT-4820
Handheld microphone, dynamic, unidirectional	WM-5265	--	
Handheld microphone, dynamic, unidirectional	WM-5270		
Beltpack Transmitter *(microphone sold separately)*			
Wireless beltpack transmitter	WM-5325	WM-5320; WM-5320A; WM-5320H	Microphones: Q-EM-22; Q-HM-22; WH-4000A; WH-4000H; YP-M5300; YP-M5310; Battery: WB-2000-2 Battery Charger: BC-5000-2; BC-5000-6; BC-5000-12
Wireless Microphones			
Lavaliere microphone, condenser, unidirectional	YP-M5300	WM-5320; 100012769A	Transmitter: WM-5325 Receiver: WT-5800; WT-5805; WT-5810; WT-4820
Lavaliere microphone, condenser, omnidirectional	YP-M5310		
Headset microphone, condenser, unidirectional	WH-4000H	WM-5320H	
Aerobic headset microphone, condenser, unidirectional	WH-4000A	WM-5320A	
Headworn microphone, condenser, omnidirectional	Q-HM-22	--	
Single ear microphone, condenser, omnidirectional	Q-EM-77		
Optional Accessories - Microphones			
Battery charger for 2 microphones *(AC adapter sold separately)*	BC-5000-2	--	Microphone/Beltpack: WM-5225; WM-5265; WM-5325 AC Adapter: AD-5000-2
Battery charger for 6 microphones *(AC adapter sold separately)*	BC-5000-6	--	Microphone/Beltpack: WM-5225; WM-5265; WM-5325 AC Adapter: AD-5000-6
Battery charger for 12 microphones *(AC adapter sold separately)*	BC-5000-12		
AC adapter *(sold separately)*	AD-5000-2	--	Battery charger: BC-5000-2
AC adapter *(sold separately)*	AD-5000-6	--	Battery charger: BC-5000-6; BC-5000-12
Battery	WB-2000-2	--	Microphone/Beltpack: WM-5225; WM-5265; WM-5325
Aerobics waist pack (belt)	WH-4000P	--	Microphone: WH-4000A
Replacement windscreen	WH-4000S	--	Microphone: WH-4000A; WH-4000H
Wireless Receivers			
True diversity receiver	WT-5800	--	Microphone: WM-5225; WM-5265; WM-5270; WM-5325
Space diversity receiver	WT-5805		
Space diversity receiver	WT-5810		
Wireless microphone receiver	WT-4820		
UHF wireless tuner module	WTU-4800	--	Module for WT-4820
Optional Accessories - Receivers			
Antenna distributor	WD-4800	--	Receiver: WT-5800; WT-5805; WT-4820
UHF wireless antenna	YW-4500	--	Receiver: WT-5800; WT-5805; WT-4820; WTU-4800
Rack mount for single receiver (1RU)	MB-WT3	--	Receiver: WT-5800; WT-5805; WT-4820
Rack mount for dual receiver (1RU)	MB-WT4		
Rack mount kit	MB-15B	--	Antenna distributor: WD-4800
Wireless Microphone Kits *(includes Microphone and Receiver)*			
Handheld condenser kit	WS-5225	WS-5200	Microphone: Q-EM-77; Q-HM-77; WH-4000A; WH-4000H; YP-M5300; YP-M5310
Handheld dynamic kit	WS-5265	--	
Lavaliere condenser (unidirectional) kit	WS-5325U	WS-5300	
Lavaliere condenser (omnidirectional) kit	WS-5325M		
Headworn condenser (unidirectional) kit	WS-5325H	WS-5300H	

TRANTEC Series Wireless Microphone Selection Guide

Optional Microphones		
Lavaliere microphone	MIC-X2; MIC-X55; MIC-X212-BE; MIC-X212-BK	Beltpack: S5.5-BTX; S5.3-BTX
Lavaliere microphone	MIC-LP2; MIC-SJ55; MIC-SJ212-BE; MIC-SJ212-BK	Beltpack: S4.16-BTX; S4.4-BTX
Glasses frame microphone	MIC-X690H	Beltpack: S5.5-BTX; S5.3-BTX
Glasses frame microphone	MIC-SJ690H	Beltpack: S4.16-BTX; S4.4-BTX
Headworn microphone	MIC-X33; MIC-X66-BK; MIC-X66-BL; MIC-X66-YE; MIC-MIC-X22-B-R; MIC-X22-P-R; MIC-XEM77;	Beltpack: S5.5-BTX; S5.3-BTX
Headworn microphone	EM-77; HM-22	Beltpack: S5.5-BTX
Headworn microphone	MIC-SJ33; MIC-SJ66-BK; MIC-SJ66-BL; MIC-SJ66-YE; MIC-MIC-SJ22-B-R; MIC-SJ22-P-R; MIC-SJEM77	Beltpack: S4.16-BTX; S4.4-BTX
Optional Accessories - Receivers		
Antenna distributor	S5-ADU	Receiver: S5.5-RX; S5.3-RX; S4.16-RX; S4.4-RX
Antenna booster	YW-7000 RF	
Passive antenna splitter	ACC-SPLIT-2W	
Directional antenna	YW-7570	
Omnidirectional antenna	YS-7520	
Wall mount antenna	YW-4500	
Whip antenna	ANT-54 BTX-D/BTX-G	
Antenna extension cable	LD-BNC-TNC	
TNC rack mount panel	PAN-1U19-TNC	
Blank panel	MW-1U-BLANK	
Receiver antenna	ANT-S5 RX-D/RX-G	Receiver: S5.5-RX; S5.3-RX
Rack mount kit	ACC-S5RX-MBI; ACC-S5RX-MB3; ACC-S5RX-MB2	
Antenna distributor	WD-4800	Receiver: S5.5-RX
Power Supply *(required)*	100072907A	Receiver: S4.16-RX; S4.4-RX
Helical antenna	ANT-54 HDX-D/HDX-G	
Antenna extension cable	LD-TNC ADU	
Guitar cable	LD-SJ-JAC	
Neoprene aerobic belt	ACC-AB1000	
Rack tray	ACC-S4.16RK	
Receiver antenna *(required)*	ANT-S4.16 RX-D/RX-G	Receiver: S4.16-RX
Rack tray	ACC-S4.16HWRK	
TNC M to BNC F Connector	15-6628	S4.16 Series

Note: Please inquire with customer service or your Regional Sales Manager as some of the TRANTEC accessories / microphones may not be available. The AC Adapter for the 5000 Series battery chargers are sold separately. The antenna and power supply are not included with the S4.16-RX Receiver.

TRANTEC Wireless Microphone Systems S5 and S4 Series

The Trantec S5 and S4 Series are synonymous with quality among vocalists, musicians and theatrical performers. Additionally, presenters and the like also enjoy the wide variety of accessories that Trantec has to offer, allowing them to meet their professional needs.

TRANTEC S5.5/S5.3 Series

S5.5/S5.3 UHF Professional Wireless Microphone System incorporates the latest technological advances, enabling it to satisfy the demands of a wide range of theater and broadcast applications. The high quality audio and RF dynamics combine with true diversity operation to provide a system with excellent multi-channel capability, enabling up to 24 channels to operate simultaneously without interference. Microphone size and running costs have been reduced, thanks to single AA cell battery operation, providing over 10 hours of continuous use. The S5.5 Professional Microphone System offers powerful features combined with an exceptional cost/performance ratio, and comes with all you need for quick and easy installation and operation.

TRANTEC S5.5 Series 24 Channel Wireless Solution

Frequency Band Selection: F1: 636 - 668 MHz, UHF
[Note: for part numbers with frequency bands and ordering information see page 5/6.]

Receiver

S5.5-RX-F1 Q

- True diversity operation
- Up to 1400 selectable frequencies (24 Simultaneous channels)
- Interactive USB based computer control and monitoring for all aspects of performance
- Frequency scan function
- Integral triple tone grip/noise and signal strength mute circuit for protection against external interference
- Simple programming of transmitter with built-in Infra-red data link
- Clear and intuitive LCD display
- EQ and phase reversal
- Professional metal enclosure

Model	S5.5-RX
Diversity System	Space diversity (true diversity)
Audio Output	Line: -22 dB*/ Mic: 62 dB* Line/Mic selectable, 600 Ω, balanced, XLR-3-32 type connector. Headphone: max. 100 mW 16 Ω, unbalanced, phone jack -28 dB*, 600 Ω, unbalanced, phone jack
Receiving Sensitivity	0 dBμ V or less (12 dB SINAD)
Squelch Sensitivity	6 - 36 dBμ V variable
Squelch System	Using together of noise SQ, carrier SQ and tone SQ
Indicator	LCD, Power lamp, Mute lamp, ANT A/B lamp
S/N Ratio	110 dB or more (A-weight)
Harmonic Distortion	1% or less (typical)
Frequency Response	50 Hz - 20 kHz, ±3 dB
Dimensions	210 (W) x 46 (H) x 210 (D) mm (8.3" x 1.8" x 8.3") (excluding antenna)
Weight	1.3kg (2.9 lbs)

*0dB = 1 V

Handheld Microphone

S5.5-HDX-F1 Q (Dynamic)
S5.5-HCX-F1 Q (Condenser)

- Simple programming of transmitter with built-in Infra-red data link
- Frequency & Power lock facility
- Single AA operation of transmitters with battery life of over 10 hours
- Integral antenna
- Clear and intuitive LCD display
- Color coded ID band
- Professional metal enclosure

Beltpack Transmitter

S5.5-BTX-F1 Q

- Credit card size beltpack
- Simple programming of transmitter with built-in Infra-red data link
- Frequency & Power lock facility
- Clear and intuitive LCD display
- Single AA operation of transmitters with battery life of over 10 hours
- Detachable antenna
- Professional metal enclosure
- Microphone sold separately *(see page 14)*

Model	S5.5-HDX [Dynamic Microphone]	S5.5-HCX [Condenser Microphone]	S5.5-BTX [Beltpack Transmitter]
RF Carrier Power	Less than 50mW (Factory preset 10mW ERP)		
Modulation System	—		PLL synthesizer
Maximum Input Level	146 dB SPL (microphone sensitivity: Gain "0")	142 dB SPL (microphone sensitivity: Gain "0")	120 dB SPL (microphone sensitivity: Gain "0")
Audio Frequency Response	60 Hz - 20 kHz	90 Hz - 20 kHz	—
Dynamic Range	110 dB or more (with S5.5-RX)		—
Audio Input Connector	—		TA-4 (Mini-XLR 4 pins)
Battery	LR6 (AA)		
Battery Life	10 hours (Alkaline)		
Indicator	LCD, Power lamp, Mute lamp, ANT A/B lamp		LCD display, Power lamp
Dimensions	ø50 x 247.9 mm (2" x 9.8")	ø50 x 232.9 mm (2" x 9.2")	55 (W) x 80 (H) x 22 (D) mm (2.1" x 3.1" x 0.9")
Weight	380g (0.84 lbs) (with battery)	300g (0.66 lbs) (with battery)	140g (0.31 lbs) (with battery)

TRANTEC S5.5 Series Kits

S5.5-HD-F1USQ
S5.5-RX+S5.5-HDX Kit
[Dynamic Handheld Mic Kit]

S5.5-HC-F1USQ
S5.5-RX+S5.5-HCX Kit
[Condenser Handheld Mic Kit]

S5.5-L-F1US Q
S5.5-RX+S5.5-BTX+Lavaliere Mic Kit
[Lavaliere Microphone Kit]

For S5.5 Series optional microphones/accessories see page 14.
For ordering information see pages 5 and 6.

TRANTEC S5.3 Series 12 Channel Wireless Solution

Frequency Band Selection: E2: 668-698MHz; F2: 636-668MHz; G7: 606-636MHz; H2: 576-606MHz, UHF
[Note: for part numbers with frequency bands and ordering information see page 5/6.]

Receiver

S5.3-RX

- True diversity operation
- Up to 640 selectable frequencies (12 Simultaneous channels)
- USB based computer monitoring
- Frequency scan function
- Integral triple tone grip/noise and signal strength mute circuit for protection against external interference
- Simple programming of transmitter with built-in Infra-red data link
- Clear and intuitive LCD display
- Professional metal enclosure

Model	S5.3-RX
Diversity System	Space diversity (true diversity)
Audio Output	Line: -22 dB*/ Mic: 62 dB* Line/Mic selectable, 600 Ω, balanced, XLR-3-32 type connector Headphone: max. 100 mW 16 Ω, unbalanced, phone jack -28 dB*, 600 Ω, unbalanced, phone jack
Receiving Sensitivity	0 dBμ V or less (12 dB SINAD)
Squelch Sensitivity	6 - 36 dBμ V variable
Squelch System	Using together of noise SQ, carrier SQ and tone SQ
Indicator	LCD, Power lamp, Mute lamp, ANT A/B lamp
S/N Ratio	110 dB or more (A-weight)
Harmonic Distortion	1% or less (typical)
Frequency Response	50 Hz - 20 kHz, ±3 dB
Dimensions	210 (W) x 46 (H) x 210 (D) mm (8.3" x 1.8" x 8.3") (excluding antenna)
Weight	1.3kg (2.87lb)

*0dB = 1 V

Handheld Microphone

S5.3-HDX (Dynamic)
S5.3-HCX (Condenser)

- Simple programming of transmitter with built-in Infra-red data link
- Frequency & Power lock facility
- Single AA operation of transmitters with battery life of over 10 hours
- Integral antenna
- Clear and intuitive LCD display
- Color coded ID band
- Professional metal enclosure

Beltpack Transmitter

S5.3-BTX

- Credit card size beltpack
- Simple programming of transmitter with built-in Infra-red data link
- Frequency & Power lock facility
- Clear and intuitive LCD display
- Single AA operation of transmitters with battery life of over 10 hours
- Detachable antenna
- Professional metal enclosure
- Microphone sold separately *(see page 14)*

Model	S5.3- HDC [Dynamic Microphone]	S5.3-HCX [Condenser Microphone]	S5.3-BTX [Beltpack Transmitter]
RF Carrier Power	Less than 50mW (Factory preset 10mW ERP)		
Modulation System	—		PLL synthesizer
Maximum Input Level	146 dB SPL (microphone sensitivity: Gain "0")	142 dB SPL (microphone sensitivity: Gain "0")	120 dB SPL (microphone sensitivity: Gain "0")
Audio Frequency Response	60 Hz - 20 kHz	90 Hz - 20 kHz	—
Dynamic Range	110 dB or more (with S5.5-RX)		—
Audio Input Connector	—		TA-4 (Mini-XLR 4 pins)
Battery	LR6 (AA)		
Battery Life	10 hours (Alkaline)		
Indicator	LCD display, Power lamp		LCD display, Power lamp
Dimensions	ø50 x 247.9 mm (2" x 9.8")	ø50 x 232.9 mm (2" x 9.2")	55 (W) x 80 (H) x 22 (D) mm (2.1" x 3.1" x 0.9")
Weight	380g (0.84 lbs) (with battery)	300g (0.66 lbs) (with battery)	140g (0.31 lbs) (with battery)

TRANTEC S5.3 Series Kits

S5.3-HD
S5.3-RX+S5.3-HDX Kit
[Dynamic Handheld Mic Kit]

S5.3-HC
S5.3-RX+S5.3-HCX Kit
[Condenser Handheld Mic Kit]

S5.3-L
S5.3-RX+S5.3-BTX+Lavaliere Mic Kit
[Lavaliere Microphone Kit]

For S5.3 Series optional microphones/accessories see page 14.

For ordering information see pages 5 and 6.

TOA Wireless Microphone Systems 5000 Series

TOA's 5000 Series is the ultimate choice for the presenter, offering incredible intelligibility so your audience won't miss a single word. You can be assured that with TOA's continuous commitment to research and development, we will always provide wireless solutions that allow your voice to be heard clearly by all.

TOA 5000 Series 16 Channel Wireless Solution

The Series lineup consists of microphones operating on a single battery, as well as microphones and a transmitter powered by rechargeable batteries. Battery chargers have also been added, for use with TOA-exclusive batteries. The chargers are available in different capacities, while the transmitter is now a standalone unit, to allow users to select the type of microphone best suited to their needs. The WT-5100 receiver, a new addition to the 5000 Series, expands the range of applications, including museums, conferences and theaters, and enhances the Series' versatility and usability.

Frequency Band Selection: E01: 668-698MHz; F01: 636-668MHz; G02: 606-636MHz; H01: 576-606MHz, UHF

[Note: for part numbers with frequency bands and ordering information see page 5/6.]

»Receiver
WT-5800

»Receiver
WT-5805

»Receiver
WT-5810

WT-5800, WT-5805 and WT-5810
- Phase Locked Loop (PLL) synthesis operation
- 64 selectable channels
- Auto mixing input function
- Squelch function (carrier, noise, tone)
- Usable frequencies scanning and vacant channel search function
- Compact half-rack size body
- Compander circuitry for minimizing ambient noise
- Low-battery indicator (wireless microphone's battery voltage becomes low)

WT-5800 and WT-5805
- True diversity technology
- Two-line LCD display
- 6 points audio level meter for microphone sensitivity adjustment

WT-5800
- Antenna distribution output

WT-5810
- TOA space diversity technology
- Balanced output (XLR connector) and phone jack output

Model	WT-5800	WT-5805	WT-5810
Power Source	AC mains (supplied AC-DC adapter must be used)		
Channel Selectable	64 channel capability (Max. 16 Simultaneous channels)		16 channel
Diversity System	Space diversity (true diversity)	Space diversity	
Mixing Output	MIC: –60dB*, 600Ω, balanced, XLR-3-31 type connector LINE: –20dB*, 600Ω, unbalanced, phone jack		
Mixing Input	–20dB*, 10 kΩ, unbalanced, phone jack		
Antenna Input	75Ω, BNC (phantom powering for antenna) 9V DC, 30mA (max.)		—
Antenna Output	75Ω, BNC (Gain 0dB)	—	
Receiving Sensitivity	90dB or more, S/N ratio (20dBμV input, 40kHz deviation)		
Squelch Sensitivity	18 – 40dBμV variable		
Squelch System	Using together of noise SQ, carrier SQ and tone SQ		
Indicator	Audio (6 step), RF (6 step), ANT A/B, Audio (peak), battery alarm		ANT A/B, Audio (peak), battery alarm
S/N Ratio	110dB or more (A-weight, unbalanced output)		104dB or more (A-weight, unbalanced output)
Harmonic Distortion	1% or less (typical)		
Frequency Response	100 – 15kHz, ±3 dB		
Dimensions	210(W) × 44(H) × 205.1(D) mm (8.3" x 1.7" x 8.1")		206(W) × 40.6(H) × 152.7(D) mm (8.1" x 1.6" x 6")
Weight	700 g (1.5 lbs)		590 g (1.3 lbs)

*0dB = 1 V

»Receiver
WT-4820

- Modular dual channel wireless receiver
- 16 selectable channel frequencies
- Antenna cascade output function (parallel connection possible for linking two WT-4820 units)
- TOA space diversity technology
- Auto mixing input function
- Antenna distribution output
- Accept up to two WTU-4800 tuner units
- Compact half-rack size body
- External antenna input

Model	WT-4820
Power Source	AC mains (supplied AC adapter must be used)
Channel Selectable	16 channel
Mixing Input	–20 dB*, 10 kΩ, unbalanced, phone jack
Antenna Input	75 Ω, BNC (phantom powering for antenna) 9 V DC, 30 mA (max.)
Antenna Output	75 Ω, BNC (Gain 0dB)
Indicator	ANT A/B, Audio (peak), Power
S/N Ratio	Over 102dB (A-weight, unbalanced output)
Harmonic Distortion	Under 1%
Frequency Response	50 – 18,000 Hz, ±3 dB
Dimensions	210(W) × 44(H) × 181(D) mm (8.3" x 1.7" x 7.1")
Weight	770 g (1.7 lbs) (without receiver unit)

*0dB = 1 V

»Receiver Unit
WTU-4800

For 5000 Series optional accessories see page 11. For ordering information see pages 5 and 6. Accessory Reference page 102.

TOA 5000 Series 16 Channel Wireless Solution

Handheld Microphone
WM-5270

- Dynamic microphone unit: Unidirectional
- 64 selectable channels
- Rolling stopper prevents the microphone from rolling
- Single AA battery operation for more compact and light weight body
- Built-in antenna

Handheld Microphone
WM-5265

- Dynamic microphone unit: Unidirectional
- 64 selectable channels
- ON/OFF switch prevents the microphone from rolling
- WB-2000 rechargeable battery or single AA battery operation for compact and lightweight body
- Built-in antenna

Handheld Microphone
WM-5225

- Electret condenser microphone unit: Unidirectional
- 64 selectable channels
- ON/OFF switch prevents the microphone from rolling.
- WB-2000 rechargeable battery or single AA battery operation for compact and lightweight body
- Built-in antenna

Beltpack Transmitter
WM-5325

- 64 selectable channels
- Maximum input level: -14 dB to -29 dB
- Built-in circuitry minimizes ambient noise effects
- WB-2000 rechargeable battery or single AA battery operation for compact and lightweight body
- Connector for ø3.5 mini-plugs
- Built-in antenna
- Microphone sold separately *(see 5000 Series Optional Mic.)*

Model	WM-5270	WM-5265	WM-5225	WM-5325
RF Carrier Power	Less than 50mW (Factory preset 10mW ERP)			
Oscillator	PLL synthesizer			
Maximum Input Level	142 dB SPL	132 dB SPL	126 dB SPL	-14dB to -29dB*1 (Audio level control: Min. to Max.)
Audio Input Connector	—	—	—	ø3.5mm (ø0.14") mini plug
Audio Frequency Response	80Hz – 15kHz	100Hz – 15kHz		
Dynamic Range (AF Circuit)	95dB or more (with WT-5800)			—
Battery	AA alkaline dry cell battery	WB-2000 (Ni-MH battery) or LR6(AA)		
Battery Life	Approx. 10h (when the alkaline battery is used)	Approx. 13h (when the WB-2000 rechargeable battery is used) Approx. 10h (when the alkaline battery is used))		
Indicator	Power/Battery lamps			
Dimensions	ø48 × 244 mm (1.9" x 9.6")	ø50 × 229 mm (2" x 9")	ø43.6 × 231.5 mm (1.7" x 9.1")	62(W)×102.5(H)×23(D)mm (2.4"x4"x0.9")
Weight	340g (0.74 lbs) (with battery)	205g (0.45 lbs) (with battery)	180g (0.4 lbs) (with battery)	90g (0.2 lbs) (with battery)

*0dB = 1 V

TOA 5000 Series Optional Microphones

Lavaliere Microphone
YP-M5300

- Unidirectional electret condenser microphone element
- Connector for ø3.5 mini-plug

Lavaliere Microphone
YP-M5310

- Omnidirectional electret condenser microphone element
- Connector for ø3.5 mini-plug

Headworn Microphone
WH-4000H

- Unidirectional electret condenser microphone

Headworn Microphone
WH-4000A

- Unidirectional electret condenser microphone
- Ideal for sports applications

Headworn Microphone
Q-HM-22

- Omnidirectional electret condenser microphone element
- Compatible with WM-5325
- 3.5mm connector

Single Ear Microphone
Q-EM-77

- Omnidirectional electret condenser microphone element
- Compatible with WM-5325
- 3.5mm connector

For 5000 Series optional accessories see page 11. For ordering information see pages 5 and 6. Accessory Reference page 102.

TOA 5000 Series 16 Channel Wireless Solution

TOA 5000 Series Kits

WS-5225
WM-5225+WT-5810 Kit
[Handheld mic. (unidirectional) kit]

WS-5265
WM-5265+WT-5810 Kit
[Dynamic handheld mic. (unidirectional) kit]

WS-5325U
WM-5325+YP-M5300+WT-5810 Kit
[Lavaliere mic. (unidirectional) with beltpack kit]

WS-5325M
WM-5325+YP-M5310+WT-5810 Kit
[Lavaliere mic. (omnidirectional) with beltpack kit]

WS-5325H
WM-5325+WH-4000H+WT-5810 Kit
[Headworn mic. with beltpack kit]

TOA 5000 Series Optional Accessories

Antenna Distributor
WD-4800

Wall Mount Antenna
YW-4500

Rechargeable Battery
WB-2000-2

Battery Charger
BC-5000-2

Battery Charger
BC-5000-6

Battery Charger
BC-5000-12

AC Adapter
AD-5000-2
for BC-5000-2

AC Adapter
AD-5000-6
for BC-5000-6/12

Waist Pouch
WH-4000P

Windscreen
WH-4000S

Rack Mount Bracket
MB-15B

Rack Mount Bracket
MB-WT3

Rack Mount Bracket
MB-WT4

(Please note that the power supplies/AC Adapter (AD-5000-6, AD-5000-2) for the 5000 Series UHF Wireless Battery Chargers (BC-5000-12; BC-5000-6; BC-5000-2) are sold separately)

TOA 5000 Series Assistive Listening

Wireless Portable Receiver
WT-5100

- Commercial earphones can also be used (ø3.5 mm, impedance: over 16Ω)
- Allows up to 16 different frequencies to be received by selection
- An optimized PLL-synthesizer minimizes the oscillation frequency drift resulting from the ambient temperature or voltage fluctuation.
- WB-2000 rechargeable battery or single AA battery operation for compact and lightweight body
- Built-in antenna

Model	WT-5100
Power Source	1.5 V DC (Battery)
Receiving Sensitivity	Better than 60 dB Signal to Noise ratio (20 dBμV input, ±40 kHz deviation)
Frequency Response	200 Hz – 5 kHz (Portable transmitter to Portable receiver)
Output Level	4 mW (16Ω load, 10% distortion)
Battery	WB-2000-2 rechargeable battery (option) or LR6/AA alkaline dry cell battery
Battery Life	16 h (when the WB-2000-2 rechargeable battery is used) 15 h (when the alkaline battery is used)
Dimensions	62 (W) × 163.6 (H) × 32.5 (D)mm (2.4" x 6.4" x 1.3")
Weight	125 g (0.28 lbs) (battery included)

*When using an earphone not made by TOA, use the one with a ø3.5mm plug and impedance of over 16Ω.

Earphone
YP-E401

Earphone
YP-E5000

For ordering information see pages 5 and 6. Accessory Reference page 102.

TRANTEC S4.16 Series 12 Channel Wireless Solution

Multichannel wireless simply does not get any easier. The S4.16 is 16 channels of tough, reliable quality that is priced to suit the tightest of budgets. This multifunction system is optimized for use with handheld, lapel mic and a range of headsets – or switch to use with a musical instrument. A single 9V battery gives approximately 10 hours of quality performance with a range of up to 100 meters.

Frequency Band Selection: E3: 668-698MHz; G4: 606-636MHz, UHF
[Note: for part numbers with frequency bands and ordering information see page 5/6.]

»Receiver

S4.16-RX

- 16 selectable frequencies
- Up to 12 simultaneous channels (Note: G band supports 8 channels)
- Fully synthesized PLL quartz tuning technology
- Receiver LED's show AF Peak level, RF Level, and Diversity Channel A or B
- Diversity operation with detachable antenna
- Professional metal enclosure
- 19" rack mount option for one or two receivers
- Antenna (ANT-S4.16 RX-D/RX-G) and power supply (100072907A) sold separately *(see page 14)*

Model	S4.16-RX
Audio Output	Balanced output: +16 dB*(max), 600 Ω, balanced, XLR-3-31 type connector Unbalanced output: +10 dB*(max), 600 Ω, unbalanced, phone jack
Receiving Sensitivity	Over 90 dB, S/N ratio (20 dBμV input, 40 kHz deviation)
Squelch Sensitivity	18 - 40 dBμV variable
Indicator	ANT A/B, Audio (peak), RF level, Power
S/N Ratio	Over 95 dB (A-weight, unbalanced output)
Harmonic Distortion	Under 1% (typical)
Frequency Response	60 - 16,000 Hz, ±3 dB
Dimensions	214(W) x 35(H) x 100.5(D) mm (8.4"x1.4"x4") (excluding antenna)
Weight	580g (1.28 lbs)

*0 dB = 0.775 V

»Handheld Microphone

S4.16-HDX (Dynamic)

- 16 selectable frequencies
- Fully synthesized PLL quartz tuning technology
- Detachable antenna
- Single 9V transmitter battery life of approx. 10 hours

»Beltpack Transmitter

S4.16-BTX

- 16 selectable frequencies
- Fully synthesized PLL quartz tuning technology
- Detachable antenna
- Locking 3.5mm jack
- Integral switch for selection between instrument and microphone
- Single 9V transmitter battery life of approx. 10 hours
- Microphone sold separately *(see page 14)*

Model	S4.16-HDX [Dynamic Handheld Microphone]	S4.16-BTX [Beltpack Transmitter]
RF Carrier Power	Max. 10 mW	
Modulation System	PLL Synthesizer	
Mic Input Connector	—	ø3.5 mini jack
Battery	6LR61 (PP3 9V)	
Battery Life	Approx. 10 Hours	
Indicator	Battery Status LED	
Dimensions	ø50 x 270 mm (2" x 10.6")	62 (W) x 102 (H) x 32.2 (D) mm (2.4" x 4.02" x 1.2") (excluding antenna)
Weight	220g (0.49 lbs)	90g (0.2 lbs)

TRANTEC S4.16 Series Kits

S4.16-H
S4.16-RX+S4.16-HDX Kit
[Dynamic Handheld Mic Kit]

S4.16-L
S4.16-RX+S4.16-BTX+Lavaliere Mic Kit
[Lavaliere Microphone Kit]

For S4.16 Series optional microphones/accessories see page 14.

For ordering information see pages 5 and 6.

TRANTEC

TRANTEC S4.4 Series Wireless Starter Pack

Trantec S4.4 is a function-packed system designed to launch you into the world of wireless. Tough, reliable and compact, this multi-function system is optimized for use with handheld, lapel mic and a range of headsets – or switch to use with a musical instrument. Not only does the S4.4 come with a bargain basement price tag, it is also extremely economical to run. A single 9V battery will give you approximately 10 hours of quality performance with a range of up to 100 meters.

Frequency Band Selection: E4: 668-698MHz; G5: 606-636MHz, UHF
[Note: for part numbers with frequency bands and ordering information see page 5/6.]

Receiver

S4.4-RX

- Four switchable frequencies
- Fully synthesized PLL quartz tuning technology
- Receiver LED's show AF Peak level, RF Level, and Diversity Channel A or B
- Professional metal enclosure
- 19" rack mount option for one or two receivers
- Power Supply (100072907A) sold seperately *(see page 14)*

Model	S4.4-RX
Audio Output	Balanced output: +16 dB*(max), 600 Ω, balanced, XLR-3-31 type connector Unbalanced output: +10 dB*(max), 600 Ω, unbalanced, phone jack
Receiving Sensitivity	Over 90 dB, S/N ratio (20 dBμV input, 40 kHz deviation)
Squelch Sensitivity	18 - 40 dBμV variable
Indicator	ANT A/B, Audio (peak), RF level, Power
S/N Ratio	Over 95 dB (A-weight, unbalanced output)
Harmonic Distortion	Under 1% (typical)
Frequency Response	100 - 15,000 Hz, ±3 dB
Dimensions	214 (W) x 35 (H) x 100.5 (D) mm (8.4" x 1.4" x 4") (excluding antenna)
Weight	580g (1.28 lbs)

*0dB = 0.775 V

Handheld Microphone

S4.4-HDX (Dynamic)

- Four switchable licence-free frequencies
- Fully synthesized PLL quartz tuning technology
- Detachable antenna
- Single 9V transmitter battery life of approx. 10 hours

Beltpack Transmitter

S4.4-BTX

- Four switchable free frequencies
- Fully synthesized PLL quartz tuning technology
- Detachable antenna
- Locking 3.5mm jack
- Integral switch for selection between instrument and microphone
- Single 9V transmitter battery life of approx. 10 hours
- Microphone sold separately *(see page 14)*

Model	S4.4-HDX [Dynamic Handheld Microphone]	S4.4-BTX [Beltpack Transmitter]
RF Carrier Power	Max. 10 mW	
Modulation System	PLL Synthesizer	
Mic Input Connector	—	ø3.5 mini jack
Battery	6LR61 (PP3 9V)	
Battery Life	Approx. 10 Hours	
Indicator	Battery Status LED	
Dimensions	ø50 x 270 mm (2" x 10.6")	62 (W) x 102 (H) x 32.2 (D) mm (2.44" x 4.02" x 1.2") (excluding antenna)
Weight	220g (0.49 lbs)	90g (0.2 lbs)

TRANTEC S4.4 Series Kits

S4.4-H
S4.4-RX+S4.4-HDX Kit
[Dynamic Handheld Mic Kit]

For S4.4 Series optional microphones/accessories see page 14.

S4.4-L
S4.4-RX+S4.4-BTX+Lavaliere Mic Kit
[Lavaliere Microphone Kit]

For ordering information see pages 5 and 6.

TRANTEC S5 and S4 Series Optional Microphones

Lavaliere Microphone
for S5 Series **MIC-X2**
for S4 Series **MIC-LP2**

Lavaliere Microphone
for S5 Series **MIC-X55**
for S4 Series **MIC-SJ55**

Glasses Frame Microphone
for S5 Series **MIC-X690H**
for S4 Series **MIC-SJ690H**

Lavaliere Microphone
for S5 Series
MIC-X212-BE (Beige)
MIC-X212-BK (Black)
for S4 Series
MIC-SJ212-BE (Beige)
MIC-SJ212-BK (Black)

Headworn Microphone
for S5 Series **MIC-X33**
for S4 Series **MIC-SJ33**

Headworn Microphone
for S5 Series
MIC-X66-BK (Black)
MIC-X66-BL (Blue)
MIC-X66-YE (Yellow)
for S4 Series
MIC-SJ66-BK (Black)
MIC-SJ66-BL (Blue)
MIC-SJ66-YE (Yellow)

Headworn Microphone
for S5 Series
MIC-X22-B-R (Black)
MIC-X22-P-R (Beige)
for S4 Series
MIC-SJ22-B-R (Black)
MIC-SJ22-P-R (Beige)
for S5.5 Series
HM-22

Headworn Microphone
for S5 Series **MIC-XEM77**
for S4 Series **MIC-SJEM77**
for S5.5 Series **EM-77**

TRANTEC S5 and S4 Series Optional Accessories

Antenna Distributor
S5-ADU

Antenna Booster YW-7000
YW-7000 RF

Passive Antenna Splitter
ACC-SPLIT-2W

Directional Antenna
YW-7570

Omnidirectional Antenna
YS-7520

Wall Mount Antenna
YW-4500

Receiver Antenna required for S4.16-RX
ANT-S4.16 RX-D/RX-G

Receiver Antenna for S5 Series
ANT-S5 RX-D/RX-G

Whip Antenna
ANT-54 BTX-D/BTX-G

Helical Antenna for S4 Series
ANT-54 HDX-D/HDX-G

Antenna Extension Cable for S5/S4 Series
LD-BNC-TNC

Antenna Extension Cable for S4 Series
LD-TNC ADU

Guitar Cable for S4 Series
LD-SJ-JAC

TNC Rack Mount Panel
PAN-1U19-TNC

Blank Panel
MW-1U-BLANK

Rack Mount Kit for S5 Series
ACC-S5RX-MBI
ACC-S5RX-MB3
ACC-S5RX-MB2

19" Rack tray for two receivers for S4.4 Series
ACC-S4.16RK

1 U 1/2 width rack tray for one receiver for S4.4 Series
ACC-S4.16HWRK

AC Adapter required for S4.16-RX & S4.4-RX
100072907A

TNC M to BNC F Connector
15-6628

(Note: Please inquire with customer service or your regional sales representative as some of these accessories may not be available.)

For ordering information see pages 5 and 6.

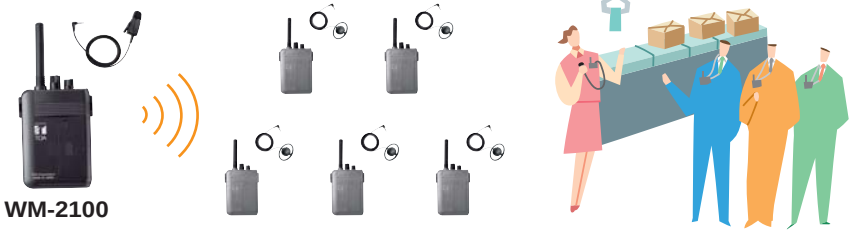
TOA Wireless Guide System

System Features

- Transmits and receives on five channels on the 470MHz frequency band
- The portable transmitter provides clear coverage over a 30-meter distance while the desk-top transmitter extends the distance to 70 meters
- Input sensitivity control with six settings on the desk-top transmitter and two-step mic input sensitivity control on the portable transmitter for ideal transmission without any signal degradation
- Desk-top transmitter transmit on/off operation controllable with external equipment
- Battery indicator provides at-a-glimpse battery level status
- Four different microphone options — paging, tie-clip, close-talking, and headset microphones to meet specific requirements
- Paging microphone and close-talking microphone equipped with press-to-talk feature to reject ambient noise
- Desk-top transmitter can be connected to external PA equipment for extending coverage area

On-site Tours

Allows on-the-spot guidance and explanation to be easily provided. Ideal when touring noisy environments such as factories, plants and other industrial sites. Also useful for guided tours of museums and other quieter environments.



Desk-top Transmitter

WM-2110

Model	WM-2110
Transmitting Frequencies	470 MHz band (5 ch) (470.075, 470.150, 470.375, 470.625, 470.725 MHz)
RF Carrier Power	5 mW
Oscillator	PLL synthesizer
Frequency Response	150 – 6,000 Hz (Desk-top transmitter to Portable receiver)
Input Level (selectable)	Standard input: –54 dB*/–60 dB*/–66 dB* (Mic) –12 dB*/–18 dB*/–24 dB* (Line) Maximum input: –30 dB*/–36 dB*/–42 dB* (Mic) +12 dB*/+6 dB*/0 dB* (Line) Mic/Line selection, 600 Ω, unbalanced, phone jack
Remote Input	Make contact input: Release voltage: 2 V DC short-circuit current: 0.2 mA loop resistance: under 100 Ω Remote control mode: Transmit radio signal when at make
Dimensions	140 (W) × 31 (H) × 119.5 (D) mm (5.5” x 1.2” x 4.7”)
Weight	270 g

* 0dB = 1V

Portable Transmitter

WM-2100

Model	WM-2100
Transmitting Frequencies	470 MHz band (5 ch) (470.075, 470.150, 470.375, 470.625, 470.725 MHz)
RF Carrier Power	2 mW
Oscillator	PLL synthesizer
Frequency Response	200 – 5,000 Hz (Portable transmitter to Portable receiver)
Input Level	–50 dB* (sensitivity Hi)/–44 dB* (sensitivity Low)
Battery Life	18 hours (alkaline)
Battery	LR6 (1.5 V) × 1
Dimensions	62 (W) × 163.6 (H) × 32.5 (D) mm (2.4” x 6.4” x 1.3”)
Weight	115 g (battery included)

*0 dB = 0.775 V

Portable Receiver

WT-2100

Model	WT-2100
Receiving Frequencies	470 MHz band (5 ch)(470.075, 470.150, 470.375, 470.625, 470.725 MHz)
Receiving Sensitivity	Better than 25 dB, S/N ratio (7 dBμVEMF input, ±1.7kHz deviation)
Frequency Response	200 – 5,000 Hz (Portable transmitter to Portable receiver) 150 – 6,000 Hz (Desk-top transmitter to Portable receiver)
Output Level	4 mW (16Ω load, 10% distortion)
Battery Life	18 hours (alkaline)
Battery	LR6 (1.5 V) × 1
Dimensions	62 (W) × 163.6 (H) × 32.5 (D) mm (2.4” x 6.4” x 1.3”)
Weight	112 g (battery included)

*When using an earphone not made by TOA, use a one with a 3.5mm diameter plug and impedance of over 16Ω.

Tie-clip Microphone

YP-M101

Close-talking Microphone

YP-M201

Earphone

YP-E401

Note: To use a wireless portable receiver with TOA’s 5000 Series Microphone System see WT-5100 on page 10.

Infrared Wireless Microphone System

TOA's Infrared Wireless Microphone System incorporates a range of conference and communication enhancing features that will appeal to users who want confidentiality as well as interference-free communication. Because the microphones use infrared signals, sensitive matters being discussed in a meeting room won't leave the room, and the wireless microphones can be used in several adjacent rooms simultaneously without interference.

Infrared Wireless Microphone

IR-200M

- Stable voice transmission
- Intelligent positioning of the emitter avoids drop-outs through user's handling
- Electret condenser microphone unit
- Lightweight
- Infrared light emission intensity adjustable
- Two selectable channels
- Antibacterial treatment
- Low-battery indicator

Infrared Wireless Microphone

IR-300M

- Ready-to-wear design with neck strap
- Intelligent positioning of the emitter avoids drop-outs through user's handling
- Built-in electret condenser microphone
- Infrared light emission intensity adjustable
- 2 selectable channels
- Antibacterial treatment
- Low-battery indicator
- Connection of optional external microphone possible
- An external MIC input level adjustable

Model	IR-200M	IR-300M
Battery	IR-200BT-2 Ni-MH battery or AA alkaline (2 pieces)	
Infrared Emitter Wavelength Modulation Method Carrier Frequency Transmission Distance	870 nm (AM: Brightness modulation) Frequency modulation Channel A: 3.100 MHz/Channel B: 3.350 MHz Approx. 20 m (Power selector switch: H; In an unobstructed space.)/Approx. 15 m (Power selector switch: N; In an unobstructed space.)	
Maximum Input Sound Pressure	120 dB SPL	
Input Sensitivity Adjustment	—	Adjustment range: -9dB to 0dB (factory-preset: 0dB)
Microphone Unit	Unidirectional electret condenser microphone	
Frequency Response	100Hz – 12kHz	
Input	—	External microphone input (ø3.5 monaural mini jack)
Battery Operation Time	Approx. 8 hours (IR-200BT-2, Power selector switch: N)	Approx. 6 hours (alkaline battery, Power selector switch: N)
Dimensions	ø37 × 241.8 mm (1.6" x 9.5")	64 (W) × 91.3 (H) × 27.3 (D) mm (2.5" x 3.6" x 1.1")
Weight	170g (with batteries)	130g (with batteries & strap)

Battery Charger

IR-200BC

Infrared Wireless Tuner

IR-702T

- Built-in 2-channel fixed-frequency tuner
- 2 Infrared receivers per unit (expandable)
- Equipped with signal reception light and knob for microphone volume control
- Two line outputs, one with a MIX output switch allowing output of mixed voice from channels A and B

Model	IR-702T
Power Source	AC mains 50/60Hz (supplied from the accessory AC adaptor)
Receiving Frequency	Channel A: 3.100MHz/Channel B: 3.350MHz
Receiver Sensitivity	S/N ratio over 50dB (40dBμ V input, 1 kHz modulation, ±4.8 kHz deviation)
Infrared Receiver Input	75 Ω, BNC jack × 2 (Infrared wireless receiver's power source: 24V DC, max. 220 mA in total of 2 terminals)
Output	Channel A and B: –10 dB* (±4.8kHz deviation, at volume level max.), 600 Ω, electronically balanced, 3 pole phone jack Note: Channel A switchable to mixer output
Frequency Response	100Hz – 12kHz
Dimensions	210 (W) × 44 (H) × 210.9 (D) mm (8.2" x 1.7" x 8.3")
Weight	630g (1.4 lbs) (unit only)

Infrared Wireless Distributor

IR-700D

- Equipped with 4 receiving mixing inputs and 2 distributor outputs
- By using the IR-700D in conjunction with IR-702T and YW-1022/ YW-1024, a system with up to 16 infrared receivers is configurable

Model	IR-700D
Power Source	AC mains 50/60Hz (use of the supplied AC adaptor)
Power Consumption	25 W or less
Input/Output	4 mixing inputs, 2 distribution outputs
Infrared Receiver Input	75 Ω, BNC jack × 4 (Infrared wireless receiver's power source: 24V DC, 800 mA in total of 4 terminals)
Number of Connectable Conference Receivers	16 (YW-1024 x 4)
Distribution Output	75 Ω, BNC jack
Dimensions	210 (W) × 44 (H) × 200.9 (D) mm (8.2" x 1.7" x 7.9")
Weight	640g (1.4 lbs) (unit only)

Wall-mount Receiver

IR-500R

- Reception area approx. 15m
- Adjustable reception angle

Ceiling-mount Receiver

IR-510R

- Reception radius approx. 8m

Wall-mount Receiver

IR-520R

- Reception area approx. 15m

Model	IR-500R	IR-510R	IR-520R
Power Source	24 V DC (supplied from the IR-702T)		
Current Consumption	Max. 40 mA	Max. 60 mA	Max. 30 mA
Infrared Detector Wavelength Carrier Frequency Communication Area Reception Angle	870 nm Channel A: 3.100 MHz/Channel B: 3.350 MHz Approx. 15 m (50 ft) in a space without any obstacles Vertical: 80° (up to 30° moveable downward) Horizontal: 80° (up to 30° moveable left of right)	— — — —	
Connection Terminal	75Ω, BNC jack		
Operating Temperature	0 °C to +40 °C (32 °F to 104 °F)		
Operating Humidity	30% to 85% RH (no condensation)		
Finish	Filter section: Polycarbonate, optical cut filter Base: ABS resin, off-white	Filter section: Polycarbonate, optical cut filter Base: ABS resin, black	Filter section: Polycarbonate, optical cut filter
Dimensions	70 (W) x 120 (H) x 72 (D) mm (2.76" x 4.72" x 2.83")	ø120 x 71.3 (H) mm (ø4.72" x 2.81")	84.5 (W) x 63.5 (H) x 32 (D) mm (3.33"x2.5"x1.26")
Weight	220g (0.49 lbs) (unit only)	205g (0.45 lbs) (unit only)	100g (0.22 lbs) (unit only)
Accessory	—	Mounting bracket x 1	Stand mounting bracket x 1, Bracket mounting screw x 2

Accessory Reference on page 102

Infrared Wireless Classroom System

TOA's educational microphone system offers wireless convenience and clear, interference free infrared voice transmission that brings classrooms to life.

- An uniform classroom-wide sound quality with a single wide-dispersion speaker which provides ample 100 m² coverage
- Quick & easy installation requiring just one CAT-5 cable
- TOA lightweight, low fatigue infrared wireless microphones

Infrared Wireless Microphone

IR-310M

Battery Charger

IR-310BC

- Usable as hands-free or hand-held microphone
- Lightweight body with unobtrusive styling
- 8-hour operation with single AA battery
- Microphone sensitivity adjustable to suit application
- Sturdy clothing clip to prevent wobbling or rotation during hands-free use

Model	IR-310M
Batteries	One piece of IR-200BT-2 rechargeable battery for the infrared wireless microphone (option)
Current Consumption	typ.250 mA (1.2 V)
Infrared Emitter Transmission Distance	Approx.15m (50 ft) (In an unobstructed space)
Input Sensitivity Adjustment	Adjustment range: 2 levels (High, Low)
Microphone Unit	Unidirectional electret condenser microphone
Frequency Response	100 Hz – 12 kHz
Preemphasis	300 µs
Input	External microphone input (ø3.5 monaural mini jack)
Battery Operation Time	Approx. 8 hours (one piece of IR-200BT-2)
Finish	Control Section: ABS resin, white/ Filter Section: Polycarbonate, optical cut filter
Dimensions	54 (W) x 109 (H) x 27 (D) mm (2.1" x 4.3" x 1.1")
Weight	95g (0.21 lb) (with battery and strap)
Accessories	Neck strap x 1

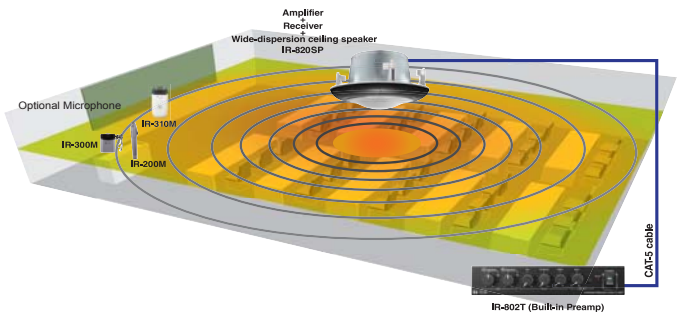
Infrared Speaker

IR-820SP

- Built-in infrared receiver and 20W digital amplifier
- Unique wide-dispersion acoustic structure employing innovative TOA technology to achieve uniform output over a wide radius
- Bass-reflex speaker system achieving a wide frequency range and high power-handling capability
- Easy installation with quick, optimally positioned ceiling mounting

Model	IR-820SP
Power Source	24 V DC (supplied from IR-802T)
Rated Output	20 W
Frequency Response	100 Hz – 20 kHz (-10 dB) at installation in 1/2 free sound field (Measured by installing the unit in the center of a ceiling.)
Amplification System	Class D
Speaker Component	12 cm (4.72") cone-type
Infrared Wireless Receiver Wavelength: Carrier Frequency: Reception Angle:	 870 nm Teacher (Channel A) : 3.100 MHz Student (Channel B) : 3.350 MHz 360° (Horizontal)
Connection Terminal	RJ-45
Connection Cable	CAT-5 UTP
Operating Temperature	-10°C to 50°C (14°F - 122°F)
Dimensions	ø320 × 205 (D) mm (12.6" x 8.1")
Weight	3.4 kg (7.5 lbs)

*0 dB = 1V



Infrared Wireless Tuner

IR-802T

- 3 AUX inputs for PC, TV/DVD player and MP3 audio player
- Output muting by 25V line signal from telephone paging
- Equalizer control knobs for low-, mid- and high-frequency outputs
- Mixing output terminal for ALD (Assistive Listening Device)
- Frequency response optimized to reduce acoustic feedback in 30 ft x 30 ft classrooms

Model	IR-802T
Power Source	AC mains, 50/60 Hz (supplied AC adapter must be used)
Receiving Frequency	Teacher (Channel A): 3.100 MHz Student (Channel B): 3.350 MHz
Receiver Sensitivity	50 dB or more, Signal-to-noise ratio (40 dBµV input, 1 kHz modulation, ±4.8 kHz deviation)
S/N Ratio	Tuner: 60 dB or more (60 dBµV input, 1 kHz modulation, ±4.8 kHz deviation, A-weighted, Equalization: Centered) AUX: 75 dB or more (A-weighted, Equalization: Centered)
Input AUX PC: AUX DVD/TV: AUX MP3: Mute:	 line, -10 dB*, 10 kΩ, unbalanced, stereo mini jack (internal mixing) line, -10 dB*, 10 kΩ, unbalanced, 2P RCA jack (internal mixing) line, -10 dB*, 10 kΩ, unbalanced, stereo mini jack (internal mixing) 25 V line signals of telephone paging from a school intercom system
Output	ALD (Assistive Listening Device): line, -10 dB*, 10 kΩ, unbalanced, monaural mini jack Speaker: RJ45 (dedicated terminal for IR-820SP connection)
Equalization	High: ±10 dB at 10 kHz/Mid: ±10 dB at 1.3 kHz/Low: ±10 dB at 100 Hz
Mute Function	Muted by 25 V line signals
Dimensions	210 (W) × 46 (H) x 312 (D) mm (8.3" x 1.8" x 12.3")
Weight	1.8 kg (4 lbs)

*0 dB = 1V

Interface Unit

IR-801AF

- Interface unit enabling paging and control of external devices with IR-310M's function button
- Installation between IR-820T with CAT-5 cable

Model	IR-801AF
Power Source	24 V DC (supplied from IR-802T)
IR Frequency Channel	Channel A: 3.100 MHz
Contact Output	Relay contact output, contact capacity: 30 V DC / 2-500 mA, removable terminal block
Audio Output	-20dB, Electrical balanced, removable terminal block
Operating Temperature	32°F to 104° F (-10°C to + 50°C)
Operating Humidity	Less than 90% RH
Finish	Control section: ABS resin, black
Dimensions	8.27" (W) x 2.73" (H) x 7.13" (D) (8.27" x 1.73" x 7.13")
Accessories	Removable terminal block (2 pins) x 1, (3 pins) x 1

For optional accessories, see page 18.
Accessory Reference on page 102

Infrared Wireless Classroom System

IR Wireless Microphone Series Accessories

Battery Charger
IR-200BC
- for IR-200M & IR-300M

Battery Charger
IR-310BC
- for IR-310M

Ni-HM Battery
IR-200BT-2

Surface mount back can
BC-820
- for IR-820SP

Wall mount bracket
WB-802
- for IR-802T

Tie-clip microphone
YP-M101

Single ear microphone
Q-EM-77

Headworn microphone
Q-HM-22

Support rails
HY-TB1
- for IR-820SP

Distributor
YW-1022
- 1 into 2 outputs

Distributor
YW-1024
- 2 into 4 outputs

Rack mount brackets
MB-WT3
- for IR-702T & IR-700D

Rack mount brackets
MB-WT4
- for IR-702T & IR-700D

Power cable connector
A-DC-Y
- Connects 2 IR-310BC to 1 AC power Adapter

IR Wireless Classroom System Kit Ordering Information

Infrared Wireless Classroom System Kits

• Order product separately or as a kit.

IR-800KIT • IR-800KIT2 • IR-800KIT3 • IR-800KIT4

	IR-800KIT	IR-800KIT2	IR-800KIT3	IR-800KIT4
[IR-820SP]	✓	✓	✓	✓
[IR-802T]	✓	✓	✓	✓
[IR-300M]	✓	✓		
[IR-200M]		✓		
[IR-310BC]	✓	✓		
[IR-310M]			✓	✓ *x 2 units*
[IR-310BC]			✓	✓ *x 2 units*
[IR-200BT-2]	✓	✓ *x 2 units*	✓	✓
[WB-802]	✓	✓	✓	✓
[HY-TB1]	✓	✓	✓	✓
[CAT-5E]	✓	✓	✓	✓
[CSTEREO-03]	✓	✓	✓	✓
[ACG36]	✓	✓	✓	✓

Accessory Reference on page 102

Rack Mount Equipment, Network Audio and Others

Equalizers

»2-Channel 2/3 Octave Graphic Equalizer

E-232

- 14 filters on 2/3 octave center frequencies from 40 Hz to 16k Hz (+/- 6 or 12 dB)
- Noiseless center-detent slide controls with precision-calibrated linear scales
- Independent selection for boost and cut of 6 or 12 dB
- ±12 dB input gain control and high pass filter
- In/out peak level indicator
- Automatic bypass if power fails EQ in/out with “hardwire” bypass if power fails
- Security cover and rack-mount brackets included (1 RU)

Model	E-232 L
Power Requirement	120V AC 60 Hz
Rated Consumption	11 W
Input	+4 dB* 30 kΩ (GAIN: 0 dB), unbalanced, phone-jack and screw terminal
Output	+4 dB* 1 kΩ, unbalanced, phone-jack and screw terminal
Max. Input Level	+32 dB (GAIN: -12 dB)
Max. Output Level	+20 dB
Frequency Response	+1 dB, -2 dB (20 Hz to 20, 000 Hz)
Total Harmonic Distortion	Less than 0.01% at 1,000 Hz (rated output)
Equalization Center Frequency	40 Hz, 63 Hz, 100 Hz, 160 Hz, 250 Hz, 400 Hz, 630 Hz 1 kHz, 1.6 kHz, 2.5 kHz, 4 kHz, 6.3 kHz, 10 kHz, 16 kHz
Control Equalizer Sliders	Boost: +12 dB, +6 dB, Cut: -12 dB, -6 dB (switchable)
Gain Range	± 12 dB
Highpass Filter	-12 dB / oct (Adjustable cutoff frequency 15 Hz to 300 Hz)
Hum and Noise (IHF-A)	Less than -98 dB* (EQ: ON, HPF: 15 Hz, GAIN: 0 dB, all sliders at 0 position)
Finish	Front Panel: Aluminum, black; Case: Steel, black
Dimensions	483 (W) x 46 (H) x 311 (D) mm (19.01” x 1.81” x 12.24”)
Weight	3.8 kg (8.38 lbs)

*0 dB = 0.775 Vrms

Multi-Channel Monitors

»Multi-Channel Monitor

MP-1216

- Sixteen transformer-isolated, bridging inputs for monitoring line level or low and high impedance speaker line signals
- Separate bar graph meter for each input
- Internal speaker with selector switch for individual channel monitoring
- Two units can be linked for 32 channel monitoring using optional cable, model YA-8
- Built-in rack-mount brackets (2 RU)

Model	MP-1216
Power Requirement	AC mains, 50/60 Hz
Power Consumption	21 W (120 V version), 25 W (220 - 240 V version)
Max. Display Level	Speaker: High impedance: 100V; Low Impedance: 1200W / 8Ω Line: +10 dB (2.45 V)
Level Meter	12-point display, -30 dB ~ +6 dB (0.3W ~ 1200W / 8Ω
Speaker Output	Max. 3 W
Headphone Output	8 Ω
Finish	Front panel: Alumite, black
Dimensions	482.6 (w) x 88.4 (H) x 312.7 (D) mm (19” x 3.48” x 12.31”)
Weight	5.3 kg (11.68 lbs)
Accessory	AC fuse, 250 V 1 A (120 V version) x 1 AC fuse, 250 V T250 mA (220 - 240 V version) x 1 Rack mounting screw x 4

MP-1216 Optional Accessories

»Cable Linking two MP-1216 together

YA-8**

»Monitor Panel

MP-032B

- Ten input channels for monitoring high impedance speaker lines
- VU meter
- Internal speaker with selector switch for individual channel monitoring
- Built-in rack-mount brackets (3 RU)

Model	MP-032B
Functions	Aural/visual monitoring (up to 10 power amplifiers)
Controls	Channel selector switch Monitor volume control Watt meter Line voltage selector switch
Speaker	Full-range 12 cm speaker
Input Lines	25 V (625 Ω), 50 V (2.5 Ω), 70 V, (5k Ω), 100 V (10 kΩ) switchable
Terminals	M4 screw terminals, distance between barriers: 8.8 mm
Finish	Surface-treated steel plate, black
Dimensions	483 (w) x 133 (H) x 87 (D) mm (19.01” x 5.24” x 3.43”)
Weight	2.2 kg (4.85 lbs)
Accessory	Rack mounting screw (with washer) x 4

Program Timer

»Program Timer

TT-104B

- For timed control of external equipment and events
- Four independent outputs with 30 programmable steps per output
- Outputs features 0.5A (24V DC) five second dry contact closures
- Weekly program with pause mode for vacations/holidays
- -/+5 second per month clock accuracy with four day backup battery if power fails

Model	TT-104B
Power Source	110 - 120 V AC, 50/60 Hz
Power Consumption	3W
Display Contents	Day of the week, hour and minute
Programmable Item	Day of the week, hour, minute, output channel
Number of Channels	4 channel (A,B,C,D)
Output System	No-voltage (DRY) make contact (5-second pulse make output)
Output Capacity	24 V DC, 0.5 A
Output Terminal	M4 screw terminal, distance between barriers: 9 mm
Program Capacity	30 steps per channel
Clock Accuracy	±5 seconds per month (25ºC)
Power Outage Protection Period	100 hours
Operating Temperature	0ºC to +50ºC (32 ºF to 122 ºF)
Finish	Panel: Aluminum, black, 30% gloss, paint Case: Pre-coated steel plate, black
Dimensions	420 (W) x 47.5 (H) x 246.5 (D) mm (16.54” x 1.87” x 9.7”)
Weight	2.5 kg (5.51 lbs)
Option	Rack-mounting bracket: MB-15B

TT-104B Optional Accessories

»Rack-mounting Bracket

MB-15B

** Special Order Product

Accessory Reference on page 103

AM/FM Tuner

Synthesized AM/FM Tuner

DT-930

- Presets for any combination of 40 AM (monaural) and/or FM (capable of receiving stereo broadcast) stations
- Frequency synthesized digital tuning with multi-function digital display
- Automatic station scanning and manual tuning
- Automatic station storage to memory using auto-scan mode
- Direct station frequency tuning entry
- Stereo output is available
- FM dipole and AM loop antenna included
- Optional rack mount kit available (MB-15B)

Model	DT-930
Power Source	120V AC, 60 Hz (supplied from the AC adapter (accessory))
Rated Consumption	180 mA (when AC adapter (accessory) is used)
Receiving Frequency	FM: 87.9 - 107.9 MHz (200 kHz step) AM: 520 - 1710 kHz (10 kHz step)
Antenna Input	FM: 300 Ω (balanced), 75 Ω (unbalanced) AM: Loop antenna (balanced), external antenna (unbalanced)
Audio Output	Stereo: -15 dB*, 10 kΩ, unbalanced, RCA jack Monaural: -15 dB*, 10 kΩ, unbalanced, M3 screw terminal, distance between barriers: 6.4 mm, RCA jack
Channels of Memory	40 channels in total for AM and FM broadcasts
Operating Temperature	0 ºC to + 40 ºC (32 ºF to 104 ºF)
Finish	Panel: Aluminum (hair-line finish), black Case: Pre-coated steel plate, black
Dimensions	420 (W) x 53 (H) x 295 (D) mm (16.54" x 2.09" x 11.61")
Weight	2.8 kg (6.17 lbs)
Accessory	AC adapter x 1, AM loop antenna x 1, FM antenna x 1, RCA stereo cord (1m) x1)
Option	Mounting bracket kit: MB-15B

*0 dB = 1 V

Optional Accessories

Rack-mounting Bracket

MB-15B

Accessory Reference on page 103

Digital Message Repeaters

Sound Repeater

EV-20R

- For paging applications with a distributed speaker system
- Up to 4 separate message selections or announcements to a total maximum of six minutes may be recorded
- Front panel-mounted recording inputs (mic/line switchable)
- PC connection via USB. A CD-ROM with various chimes is included
- Pre-recorded message can be transferred via USB-interface
- Built-in interval timer allows messages to be repeated at various time intervals (0.5 seconds up to ∞)
- 3W / 8Ω amplifier section built-in for direct speaker connection. Volume control for level adjustment of an external source
- A line input and output for connecting various program sources including CD players or dedicated BGM inputs

Model	EV-20R
Power Source	Supplied from an external 24 V DC/400 mA power supply or from an optional AD-246 AC Adapter
Power Consumption	10 W (rated output)
Wave Format	44.1 kHz sampling frequency, 16-bit PCM (monaural)
Frequency Response	20 Hz - 20 kHz ±3 dB (1 kHz) 50 Hz - 14 kHz ±3 dB (IT-450 mounted, 1 kHz)
Distortion	1% or less (1 kHz, rated output)
Recording System	USB data transfer or analog recording
Control Input	Play 1-4, stop: No-voltage make contact input, pulse make length: 200 ms, open voltage: 30 V DC, short-circuit current: 10 mA removable terminal block (22 pins)
Control Output	Busy: Contact capacity: 30 V DC/0.5 A, removable terminal block (22 pins)
Input	Input/Recording input: Mic: -60 dB*, 2.2 kΩ/Line: -20 dB*, 10 kΩ, (Mic/Line changeable), unbalanced, phone jack Line input: 0 dB*, 10 kΩ, unbalanced, removable terminal block (22 pins)
Output	Line output: 0 dB*, 600 Ω, unbalanced, removable terminal block (22 pins) Headphone output: 0 dB*, 100 Ω, unbalanced, phone jack Speaker output: 3 W, 8 Ω, removable terminal block (22 pins)
LED Indicator	POWER, USB, START/STOP 1-4
Max. No. of Messages	4 (Pre-recorded audio data: Message 1: Westminster chime; Message 2: Ascending 4-tone chime; Message 3: Descending 4-tone chime; Message 4: none (Note: the above audio sources can be overwritten by using the supplied software. These audio sources are also on the supplied CD-ROM.)
Max. Recording Time	6 min
Message Delay Time	0, 2 s or 4 s (selectable)
Playback Interval Time	∞, 0, 5 s, 10 s, 30 s, 1 min, 5 min, 10 min, 30 min, or 1 hr (selectable)
Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)
Operating Humidity	90% RH or less (no condensation)
Finish	Case: ABS resin, black
Dimensions	210 (W) x 44.2 (H) x 181 (D) mm (8.27" x 1.74" x 7.13") (excluding projection)
Weight	730 g (1.61 lbs)
Accessory	CD-ROM (USB data transfer software and sample chimes recorded) x1, Unbalanced-phone plus x 1, USB cable (1 m) x 1, Removable terminal plug (22 pins) x 1, Rubber foot x 4
Option	Rack mounting bracket: MB-WT3 (for rack mounting one EV-20R unit); MB-WT4 (for rack mounting two EV-20R units); AC adapter: AD-246
USB Data Transfer Software Operation Environment	
Personal Computer	Windows PC (equipped with the USB terminal)
Main Specifications	CPU: Pentium compatible CPU of 300 MHz or faster Memory: 128 MB or more Free disk space: 10 MB or more (space for message storage excluded) Optional Drive: CD-ROM drive
OS	Windows XP (32-bit edition) / Vista (32-bit edition) / 7 (32-bit edition)

*0 dB = 1 V

Note:
Line input and line output can be converted to balanced type using an optional IT-450 transmitter.
Pentium is a trademark of Intel Corporation. Windows is a registered trademark or trademark of Microsoft Corporation in the United States and/or other countries. Other company names and products are also trademarks of individual companies.

Optional Accessories

Rack-mounting Bracket

MB-WT3

Rack-mounting Bracket

MB-WT4

AC Adapter

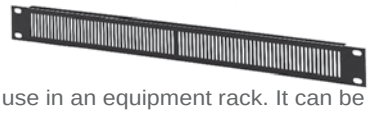
AD-246

Accessory Reference on page 103

Optional Accessory: Rack Equipment for Mixers/Amplifiers

Perforated Vent Panel

PF-013B**



• 1The PF-013B is a perforated panel of one unit size for use in an equipment rack. It can be mounted in any EIA Standard rack.

Accessory Reference on page 103

Network Audio Adapters

Network Audio Adapter

NX-100

Network Audio Adapter Economy Version

NX-100S**

Optional Accessories

Rack-mounting Bracket

MB-15B-BK

Rack-mounting Bracket

MB-15B-J

AC Adapter

AD-246

Applications

- Airports
- Auditoriums / Theatres
- Broadcast
- Business Music Distribution
- Corporate Messaging
- Hotels
- Industrial / Warehouses
- Museums
- Performing Arts Centers
- Railway Stations
- Sports Facilities
- Theaters
- Transit Stations
- Audio Distribution to Multiple Remote Locations
- Business Music
- Convention Centers
- Educational Facilities
- Houses of Worship
- Remote Monitoring
- Paging Distribution
- Public Address
- Retail Chain Stores
- Stadiums
- Theme Parks
- Wide Area Paging

Differences between the NX-100 and NX-100S

	NX-100	NX-100S
Audio transport	Yes	Yes
Switch transport	Yes	Yes
RS-232C transport	Yes	No
Power source	AC or 24 V DC	AC only
Input signal LED	No	Yes
Input peak level LED	No	Yes
Phantom power supply	No	Yes

- Converts analog audio (mic or line) to packet audio IP format for transmission over existing local or wide area networks (LAN/WAN) including the Internet
- Bi-directional audio transport plus contact closures and serial RS-232 (NX-100 only)
- Reduces installation and operational costs when distributing audio signals to remote locations
- Balanced mic/line input with adjustable volume control
- Phantom power for condenser microphones (NX-100S only)
- Balanced line output
- Built-in Ethernet port (10/100BaseT)
- Point-to-point transmission (Unicast) of audio signals to up to 4 locations (LAN/WAN/Internet)
- Simultaneous transmission (Multicast) of audio signals to up to 64 locations (LAN/WAN)
- Control inputs can initiate and terminate audio transmissions without the need for dedicated PC-based or other control equipment
- 8 control inputs with adjustable contact off delay time
- 8 control outputs: open collector output
- Adjustable sample rate and audio bandwidth allows efficient use of network resources
- Minimum delay: 20 ms
- Multiple error correction modes
- Intuitive Configuration, Operating and Management software
- Browser-based software allows control and monitoring from any network-based PC
- Convenient End User features including customizable Operation software, Operation logs and password protection
- Front panel indication: Link/Active, Full-Duplex/Collision, Status, Error, Run
- Signal and Peak Indicators (NX-100S only)
- Front panel reset button
- External 24 VDC input for battery backup operation (NX-100 only)
- Easy to upgrade flash memory firmware
- Compact, half-rack size unit (1 RU)
- Requires AC power supply, model AD-246
- Optional rack-mount kits (1 RU), model MB-15B-BK (1 NX-100/NX-100S), model MB-15B-J (2 NX-100/NX-100S)

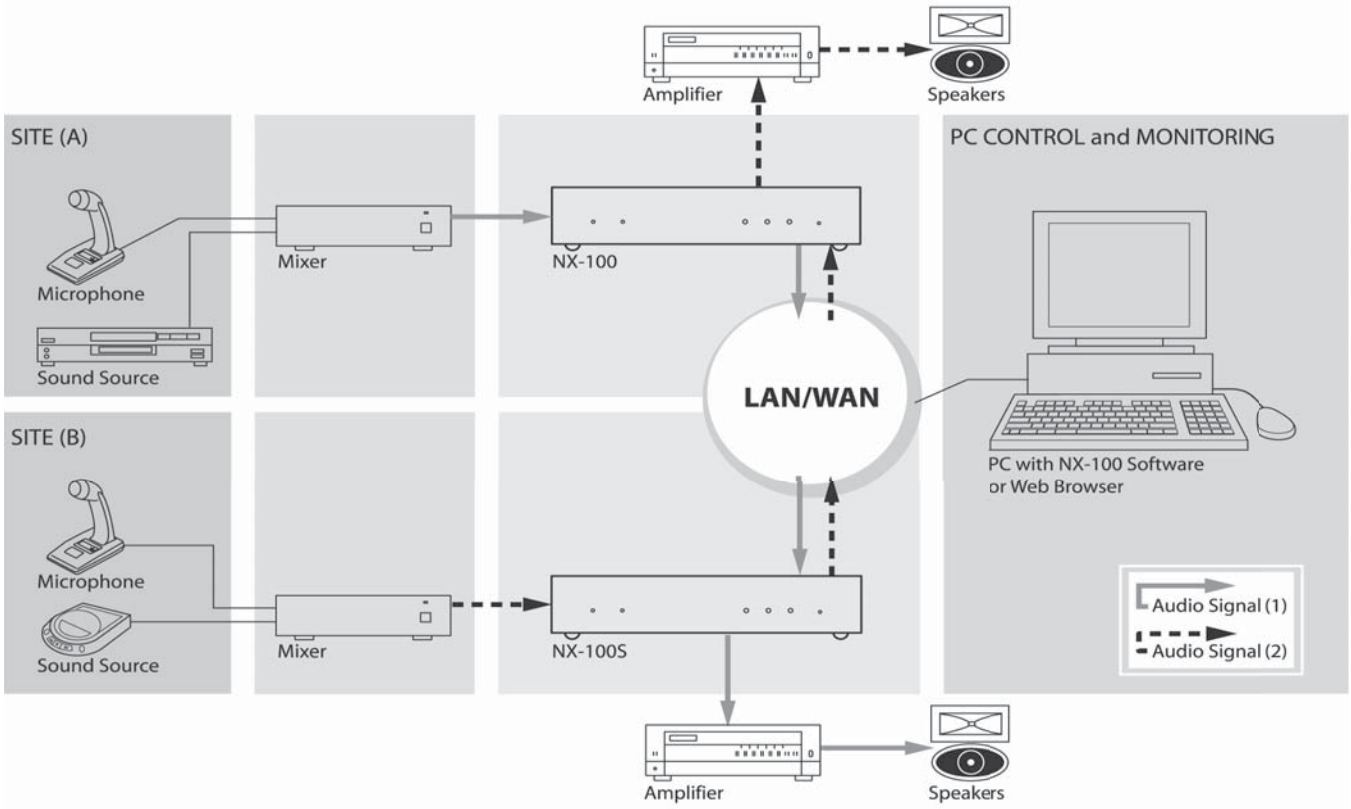
Accessory Reference on page 103

** Special Order Product

Network Audio Adapters

Model	NX-100	NX-100S
Power Source	24 V DC (removable terminal block (3 pins) or AC adapter AD-246 (optional) or the equivalent	AC adapter AD-246 (optional) or the equivalent
Current Consumption	200 mA (DC operation)	7 W (when AD-246 (optional) is used)
Audio Input	1 channel (transformer-isolated), -58 dB* to 0 dB*, balanced (MIC/LINE changeable, volume adjustable with volume control), 2 kΩ, removable terminal block (3 pins)	1 channel (transformer-isolated), -58 dB* to 0 dB*, balanced (MIC/LINE changeable, volume adjustable with volume control), 2 kΩ, removable terminal block (3 pins), phantom power supply (24 V, can be set with the switch)
Audio Output	1 channel (transformer-isolated), balanced, 600 Ω, removable terminal block (3 pins)	
Frequency Response	50 - 14,000 Hz (when frequency sampling is 32 kHz	
Distortion	Under 0.3% (1 kHz, when sampling frequency is 32 kHz)	
Control Input	8 channels, no-voltage make contact input, open voltage: 12 V DC, short-circuit current: 10 mA, removable terminal block (9 pins)	
Control Output	8 channels, open collector output (polarized), withstand voltage: 30 V DC, control current: 50 mA max., removable terminal block (9 pins)	
Network I/F	10BASE-T/100BASE-TX, Auto-Negotiation	
Serial I/F	RS-232C (DCE I/F), D-sub connector (9P, male), 9600bps - 115200bps	--
Network Protocol	TCP, UDP, ARP, ICMP, HTTP, RTP, IGMP	
Audio Packet Transmission System	Unicast (Up to 4 simultaneous transmissions), Multicast (Up to 64 simultaneous transmissions)	
Operating Temperature	0 °C to +50 °C (32 °F to 122 °F) (0 °C to +40 °C (32 °F to 104 °F) when AC adapter is in use)	
Operating Humidity	90% RH or less (no dew condensation should be produced)	
Finish	Steel plate, black, 30% gloss	
Dimensions	210 (W) x 44.7 (H) x 188 (D) mm (8.27" x 1.76" x 7.4")	
Weight	1.2 kg (2.64 lbs)	
Accessory	CD (PC Installation & Operation software programs, Instruction manuals) x 1, Power supply removable terminal plug (3 pins) x 1, Audio I/O removable terminal plug (3 pins) x 2, Control I/O removable terminal plus (9 pins) x 2, RS-232C connector cover x 1, Bracket mounting screw x 8	CD (PC Installation & Operation software programs, Instruction manuals) x 1, Audio I/O removable terminal plug (3 pins) x 2, Ferrite clamp x 1, Control I/O removable terminal plus (9 pins) x 2, Bracket mounting screw x 8
Option	Rack mounting bracket: MB-15B-BK (for rack mounting one NX-100(S) unit); MB-15B-J (for rack mounting two NX-100(S) units); AC adapter: AD-246	

*0 dB = 1 V



Accessory Reference on page 103

Mixers

Stereo Mixer

6-Channel Stereo Mixer

M-243

- Two mono mic/line inputs, each with compressor and high pass filter
- Four stereo inputs with RCA and 1/4" phone plug connectors
- Stereo output with separate paralleled record outputs
- Two mono outputs, switchable to stereo sum
- Inputs independently assignable to any combination of stereo and mono outputs
- Stereo and mono sub-inputs for direct access to individual mixing buses
- Auto-priority of mono over stereo inputs for paging/BGM applications
- Low and high frequency EQ for stereo output (with clipping indicators)
- Security cover and rack-mount kit included (1 RU)

Model	M-243
Power Source	120 V AC, 50/60 Hz
Power Consumption	10 W
Monaural Input	Line: -10 dB*, 10 kΩ, unbalanced, phone jack Mic: -60 dB*, 1 kΩ, balanced, XLR3-pin connector Mic (Pad): -40 dB*, 1 kΩ, balanced, XLR3-pin connector
Stereo Input (L, R)	-10 dB*, 10 kΩ, unbalanced, RCA jack
Auxiliary Stereo Input	+4 dB*, 50 kΩ, unbalanced, phone jack
Stereo Output (L, R)	+4 dB*, 1 kΩ, unbalanced, phone jack
Monaural Output (1, 2)	+4 dB*, 1 kΩ, unbalanced, RCA jack
REC Output (L, R)	-10 dB*, 1 kΩ, unbalanced, RCA jack
Frequency Response	20 - 20,000 Hz (+1, -2 dB)
T.H.D.	0.01 % or less (1,000 Hz, rated input/output)
Noise Level (IHF-A)	When all volume controls are in minimum position Stereo Output (L, R): -105 dB* or less Monaural Output (1, 2): -98 dB* or less When the stereo, monaural (1, 2) are in maximum position. Stereo Output (L, R): -94 dB* or less Monaural Output (1, 2): -95 dB* or less
Finish	Front Panel: Alumite, black Case: Steel, black
Dimensions	483 (W) × 46 (H) × 301.8 (D) mm (19.02" × 1.81" × 11.88")
Weight	8.38lbs (3.8kg)
Accessory	Rack mounting screw x 4, Rubber foot x 4, Knob (blue, small) x 2, Knob (red, small) x 2, Knob (blue, large) x 1, Knob (red, large) x 1

*0 dB = 0.775 V

Digital Stereo Mixer

Digital Stereo Mixer

M-633D

- Automatic Resonance Control (ARC) function, Feedback Suppression (FBS) function, and Automatic Clipguard enhance sound intelligibility
- Automatically eliminates unpleasant reverberation and feedback to deliver clear, highly articulate sound
- Stereo mixer with 12 input channels (6 monaural inputs and 3 stereo inputs) and 6 output channels (2 monaural outputs, 1 stereo output, and 1 stereo recording output)
- 2 monaural bus lines allow each input signal to be assigned to each bus line individually
- Ideal for houses of worship, gymnasiums, meeting rooms, and more

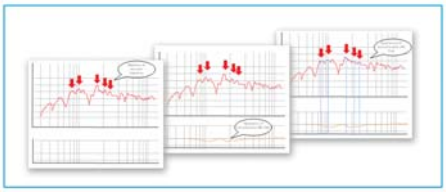
Model	M-633D
Input	6 monaural input channels, switchable LINE, MIC or PHANTOM LINE: -10dB*, 2.4k Ω MIC:-46 dB*, 2.4k Ω PHANTOM:-46 dB*, 2.4k Ω, +24V DC, electronically balanced Removable terminal block (3 pins), phone jack 3 stereo inputs (L, R) -10 dB* / 10k Ω, RCA jack, stereo mini jack
Bus Line	Monaural channel x 2, stereo channel x 1
Frequency Response	20 Hz - 20kHz
Sampling Frequency	48 kHz / 24 bits
Dynamic Range	90 dB or more (IHF-A weighted)
Output	3 monaural outputs 0 dB*, electronically balanced, removable terminal block (3 pins) 1 stereo output (L, R) 0 dB*, electronically balanced, removable terminal block (3 pins) 1 stereo recording output (L, R) -10 dB*, RCA jack
Signal Processing	Automatic Resonance Control (ARC) Feedback Suppressor (FBS) Automatic Clipguard (ACG) Automatic Mute
Dimensions	420 (W) x 44 (H) x 341.1 (D) mm (16.54" x 1.73" x 13.44"
Weight	8.82lbs (4kg)

*0 dB = 1V

ARC: Automatic Resonance Control

ARC, Automatic Resonance Control, is a TOA proprietary method to automatically generate an optimum filter curve to improve sound clarity after measuring the acoustic characteristics in architectural spaces. ARC solves sound deterioration caused by acoustic Feedback and Resonance. Look for TOA ARC enabled products to help solve your acoustically challenging spaces.

Products Using ARC:
- DP-K1 - Digital Audio Processor
- M-633D - Digital Stereo Mixer
- M-864D - Digital Stereo Mixer



Digital Stereo Mixer

The M-864D is a 4U rack mountable Digital stereo mixer. It features 8 monaural Mic/Line input channels and 2 stereo input channels (7 sources), 6 output channels including 4 bus assignable monaural output channels and 1 stereo recording output channel. It is equipped with digital signal processing functions such as Automatic Resonance Control function (ARC) Feedback Suppressor function (FBS), Automatic stereo input mute function (AUTO MUTE or Ducker), and Parametric Equalizer. Advanced acoustic compensation can be automatically performed without using any acoustic measuring instruments. Furnished with various function setting buttons and 14 analog volume faders, the M-864D can be operated without the need for a PC. However, it can also be operated by connecting the PC or optional Remote control panel. It can be mounted in an EIA standard component rack (4U size).

»Digital Stereo Mixer

M-864D

- Automatic Resonance Control function (ARC)
- Feedback Suppressor function (FBS)
- Automatic stereo input mute function (AUTO MUTE or Ducker)
- Parametric Equalizer

»Software

TOA's M-864D Software can be downloaded at www.TOAcanada.com

* 0 dB = 0.775V

Model	M-864D
Power Source	100-120 V AC, 60 Hz
Power Consumption	30 W
Input	Monaural input, 8 channels, removable terminal block (3P); Phantom power (+24 V DC, 10 mA, ON/OFF switchable for each terminal); Gain setting (settable for each channel) : PAD ON Gain min., +4 dB* (max. +24 dB*), 10 kΩ, electronically-balanced; Gain max., -14 dB* (max. +6 dB*), 10 kΩ, electronically-balanced : PAD OFF Gain min., -10 dB* (Max. +10 dB*), 7 kΩ, electronically-balanced; Gain max., -56 dB* (max. -36 dB*) 7 kΩ, electronically-balanced; Stereo Input (L, R), 7 channels (1-A, 1-B, 1-C, 2-A, 2-B, 2-C, front-mounted input); RCA jack (stereo mini jack provided on the front panel) : -110 dB* (max. +10 dB*), 10 kΩ Trim gain for each individual channel: - ∞ to 0 dB (except front-mounted input) 1-A (L), 1-B (L), and 1-C (L) are mixed after passing through each trim gain circuit (the same applies to R channel) 2-A- (L), 2-B (L), and 2-C (L) are mixed with front-mounted input after passing through each trim gain circuit (the same apples to R channel)
Output	Output, 4 channels, +4 dB* (max. +24 dB*), applicable load 600 Ω or more, electronically-balanced, removable terminal block (3P); REC OUT (L, R): -10 dB* (max. +10 dB*), applicable load 1 kΩ or more, RCA jack Gain is adjustable.
Feedback Suppressor Function	Feedback suppressor filter creation, 8 channels (each monaural input channel), settable independently on each channel, ON/OFF switch x8, ON/OFF LED x8
Equalizer	Parametric equalizer: 20 Hz - 20 kHz, ±15 dB, Q: 0.267 - 69.249, 4 channels (each output channel)
Matrix	12 x 4
Auto Resonance Control (ARC) Measurement	ARC measuring start switch x1, ON/OFF LED x1
Control Input	8 channels, open voltage: 24 V DC, short-circuit current: 5 mA, removable terminal block (10P)
Contact Output	8 channels, no-voltage make contact, contact capacity. 24 V DC/100 mA, removable terminal block (10P)
Operating Temperature	0 °C to +40 °C (32 °F to 104°F)
Finish	Panel: Aluminum, hairline, black, Case: Surface-treated steel plate
Dimensions	482.6 (W) x 117.1 (H) x 157.2 (D) mm (19" x 6.97" x 6.19")
Weight	5.1 kg (11.24 lb)
Accessory	Power cord (2 m (6.5 ft)) x 1, removable terminal plug (3P) x 12, large type removable terminal plug (10P) x2, small type removable terminal plug (10P) x1, fader gang bar x4, protective over x1, CD-ROM (containing setup software) x1
Option	Remote control panel: ZM-9011, ZM-9012, ZM-9013, ZM-9014; AC adapter: AD-246 (when using the Remote Control Panel)

M-864D Optional Remote Control Modules

»Assignable Remote Button Panel
ZM-9011

»Assignable Volume Controller
ZM-9012

»Assignable Remote Button Panel
ZM-9013

»Assignable Remote Button Panel with Volume Control
ZM-9014

For specifications and complete details refer to 9000M2 Series Modules and Accessories on page 37.

Digital Modular Mixer

TOA's D-901 is a 19" wide rack-mounted (3U high) digital mixer configured with 12 inputs, 8 buses, and 8 outputs. It features signal processing functions necessary for sound systems such as feedback suppression and auto-mixing. Modular construction permits flexible configuration of inputs and outputs, from 2-IN/4-OUT to 12-IN/8-OUT systems. All functional parameters can be set at the unit. Settings can be stored in the unit's internal memory a "preset memory" and can be recalled using the front panel-mounted operation keys.

Digital Modular Mixer

D-901

- Modular design allows versatile configurations of up to 12 inputs and 8 outputs
- Auto-Mixing allows "set-and-forget" operation
- Feedback Suppression automatically attenuates up to 12 problem frequencies
- Eight bus matrix with crosspoint gain control allows flexible input-to-output signal routing for zoning or room-combining
- Delay, high/low pass and notch filters, parametric equalizers, compressor/auto leveler, gate, crossovers and crosspoint gain
- PC software for off site programming and archiving settings
- 16 internal memories for storage and recall of different signal routing and parameter configurations
- AMX* and Crestron* software modules available
  - connects via RS-232

**Note: AMX is a registered trademark of AMX corporation. Crestron is a registered trademark of Crestron Electronics Inc.*

* 0 dB = 0.775 V

Model	D-901
Power Source	100-120 V AC, 50/60 Hz
Power Consumption	40 W
Frequency Response	20 Hz - 20 kHz, ± 1 dB (+4 dB* input)
Input	Max. 12 channels, modular construction (modules optional)
Output	Max. 8 channels, modular construction (modules optional)
SIGNAL PROCESSING	
Feedback Suppression Function	12 filters (auto/dynamic)
Auto-Mixing Function	Ducker (automatic muting), NOM attenuation
Auto-Mixing Group	4 groups
Equalizer/Filter	Parametric equalizer: 20 Hz - 20 kHz, ±15 dB, Q: 0.267-69.249; Filtering: High-pass filter 20 Hz - 20 kHz, 6 dB/oct, 12 dB/oct; Low-pass filter 20 Hz - 20 kHz, 6 dB/oct, 12 dB/oct; Notch filter 20 Hz - 20 kHz, Q: 8.651-69.249 ; All-pass filter 20 Hz - 20 KHz, Q: 0.267 - 69.249; High shelving filter 6 - 20 kHz, ±15 dB; Low shelving filter 20 - 500 Hz, ±15 dB; Horn equalizer 20 kHz, 0 to +18 dB (1 dB steps); Crossover filter: 20 Hz - 20 kHz, 6 dB/oct, 12 dB/oct, 18 dB/oct, 24 dB/oct
Compressor/Auto-Leveler	(Compressor mode) Threshold: -20 to +20 dB (1 dB steps); Ratio: 1:1, 2:1, 3:1, 4:1, 8:1, 12:1, 20:1, ∞:1; Attack time: 0.2 ms - 5s; Release time: 10 ms to 5s; Gain: -∞ to +10 dB (Auto-leveler mode) Target level: -20 to +10 dB (1 dB steps); maximum gain: 0 to +20 dB (1 dB steps); Attack time: 10 ms - 10 s; Release time: 100 ms to 10 s
Delay	Delay time: 0 - 682.6 ms (0.021 ms steps)
Matrix	12 x 8
Crosspoint Gain	-∞ to 0 dB (1 dB steps)
Preset Memory	16
Auxiliary Function	System locking function
Control	RS-232C, D-sub connector (9 pins), Remote control module (option)
Front Panel Section	Preset memory recall key: 8; LCD screen, screen shift key (up/down/left/right), setting knob; Input level indicator: dual colour LED; Output level indicator: dual colour LED; Channel selector key: 12 (input channel selection), 8 (output channel selection); Channel volume control: 1 (input channel selection), 1 (output channel selection)
Rear Panel	Input module slot: 6 (input/output module slot: 2); Output module slot: 2; Remote control module slot: 1
Operating Temperature	+5 °C to +40 °C (41 °F to 104°F)
Finish	Panel: Aluminum, hairline, black, Others: Pre-coated steel plate, black 30% gloss
Dimensions	482.6 (W) x 132.6 (H) x 320 (D) mm (19" x 5.22" x 12.6")
Weight	6.9 kg (15.21 lb)
Accessory	Power cord (2 m (6.5 ft)) x 1, rack mounting screw x 4, rack mounting bracket (preinstalled on the unit) x 2, module mounting screw (spare) x 4, blank panel (preinstalled on the module slot) x 9

Software

TOA's D-901 Control Software can be downloaded at www.TOAcanada.com

Please refer to the Digital Mixer Modules - D-901, D-2000 and DP-K1 on page 27.
Note: The M-9000M2 is also a Digital Mixer. Refer to 9000 Series to learn more on page 33.

D-2000 Series Digital Mixing System

TOA's D-2000 Series integrates high-performance mixing, matrixing and processing functions to meet a wide scope of sound reinforcement applications.

Expandable to a maximum system configuration of 128 combined inputs and/or outputs, the D-2000 Series included various modules and peripherals that can be combined to create the best possible sound in small to medium sized venues.

⋙Digital Mixing Processor Unit

D-2008SP

- Ideal for applications including; hotel banquet and function rooms, indoor sports facilities, multi-purpose halls, houses of worship, and more
- NOM (Number of Open Microphones) - automatically adjusts output levels based on the total number of open microphones
- Ducker function (auto-mute function) - automatically worked to attenuate outputs of channels with low priority
- Highly effective feedback suppression: providing feedback elimination for up to 4 channels. In addition, each channel can control 12 problem frequencies, making it convenient for feedback suppression in different areas of the same hall.
- 4 bus assignable feedback suppressions with 2 versatile suppression modes: Auto mode or real-time dynamic mode
- Delay, high-pass, low-pass and notch filters, parametric equalizers, compressor/auto leveler, gate, crossovers and crosspoint gain
- 32 preset memories for user convenience
- Intuitive GUI helps streamline settings and adjustments
- D-2000 Series units can be used in conjunction with the optional D-911 VCA Fader Unit providing analog mixer user interface
- RS-232C port allows external control when connected to external devices such as AMX and Crestron control units
- User-specific configurations
- 24-bus matrix: flexible input-to-output signal routing for zoning or room-combining
- A 128 combined input and/or output system can be constructed by connecting four D-2008SP units using the CobraNet module. LAN-connected D-2008SP units can be remotely operated from TOA's PC software
- Works with optional Q-D-2012C fader controller using LAN connection

* 0 dB = 0.775 V

Model	D-2008SP
Power Source	120 V AC, 60 Hz
Power Consumption	78 W
Frequency Response	20 Hz - 20 kHz, ±1 dB (+4 dB* input)
Sampling Frequency	48 kHz
Input and Output	Input: Max. 32 channels, modular construction (module optional); Output: Max. 32 channels, modular construction (module optional); Headphone: 1 stereo
Signal Processing	Feedback suppression function; Auto mixing function; Auto mixing group; Parametric equalizer; High-pass filter; Low-pass filter; Notch filter; All-pass filter; High shelving filter; low shelving filter; horn equalizer; crossover filter; compressor/auto-leveler; Output delay; BUS delay; Matrix; CobraNet* Matrix; Crosspoint gain
Preset Memory	32
Auxiliary Function	Key locking function
LAN	Network I/F: 10 BASE-T/100BASE-TX (Automatic-Negotiation) Connected cia a switching hub; Network protocol: TCP/IP; Connection cable: Shielded Category 5 or higher twisted pair LAN cable (CAT5-STP); Maximum cable distance: 100 m (between D-2008DP and switching hub)
Control	RS-232C: D-sub connector (9 pins) Used for external control; Module: Remote control module slot: 2
Operating Temperature	+5 °C to +40 °C (41 °F to 104°F)
Dimensions	482 (W) x 132.6 (H) x 343.4 (D) mm (18.98" x 5.22" x 13.52")
Weight	6.3 kg (13.89 lb)
Accessory	Power cord (2 m (6.5 ft)) x 1, Module mounting screw (spare) x 4, Blank panel (preinstalled on the module slot) x 8, CD (set-up software) x 1
Option	Mic/line input module: D-2000AS1, D-921E, D-921F, D-922E, D-922F; Stereo select input module: D-936R; Digital input module: D-923AE; Line output module: D-971E, D-971M, D-971R, D-2000DA1; Digital output module: D-972AE; CobraNet interface module: D-2000CB; Remote control module: D-981, D-983; VCA control module: D-984VC

⋙Software

TOA's D-2008 Control Software can be downloaded at www.TOAcanada.com

Please refer to the Digital Mixer Modules - D-901, D-2000 and DP-K1 on page 27.

D-2000 Series Digital Mixing System

Remote Console Unit

Q-D-2012C

The Q-D-2012C is a 6U rack mountable Remote Console Unit designed for exclusive use with the D-2008SP Digital Mixing Processor Unit. Assigned to any desired channels inside the D-2008SP by the dedicated software, the Q-D-2012C's 12 motorized faders and 8 rotary encoders can remotely adjust their volumes. Desired preset memories can be recalled using 8 function keys. It is equipped with 1 channel line input (stereo), which allows the audio signal to be transmitted to the D-2008SP via monitor bus. Audio signals inside the D-2008SP can be monitored via monitor bus through headphones connected to a stereo headphone output. The Q-D-2012C can be installed on a desk with the additional use of an optional Q-D-2012AS Console Case.

Console Case for Q-D-2012C

Q-D-2012AS

* 0 dB = 0.775 V

Model	Q-D-2012C
Power Source	100 - 120 V AC, 60 Hz
Power Consumption	18 W
Volume Adjustment	100 mm motorized fader x 12; Rotary encoder x 8
Line Input	1 channel (stereo), +10 to -20 dB*, 10 kΩ, unbalanced, RCA Pin-jack
Headphone Output	Stereo 100 mW + 100 mW (32 Ω load), standard stereo phone-jack
Monitor Bus	1 stereo input, 1 stereo output; Connector: RJ45 connector; Connection cable: Shielded twisted pair (STP) CAT-5 or higher LAN cable (2 pairs of data lines); Maximum cable distance: 100 m (109.36 yd) (between D-2012C and D-2008SP)
LAN	Network I/F: 10 BASE-T/100BASE-TX (Automatic-Negotiation) RJ45 connector, connected via a switching hub; Network protocol: TCP/IP; Connection cable: Shielded twisted pair (STP) CAT-5 or higher LAN cable; Maximum cable distance: 100 M (109.36 yd) (between D-20008SP and switching hub)
Control	RS-232C: D-sub connector (9 pins) for maintenance use
Dimensions	482 (W) x 266 (H) x 138 (D) mm (18.98" x 10.47" x 5.43")
Weight	6.6 kg (14.55 lb)
Accessory	Power cord (2 m (6.5 ft)) x 1, Rack mounting screw x 4, Fader knob (yellow) x 3, Fader knob (red) x 3, Cord clamp (fitting screw) x 1
Option	Console case: Q-D-2012AS

D-2000 Series Modules

Mic/Line Input Module

D-2000AD1

- 4-channel, XLR connectors
- A/D converter: 24 bit
- Phantom power supply (48V)
- THD: 0.008% or less

Model	D-2000AD1
Input	4 channels, Mic/Line selectable Mic: -50/-36dB, 2.6kΩ, electronically-balanced Line: -10dB, 2.6kΩ/+4dB, 7kΩ, electronically-balanced Connector: XLR-3-31 equivalent Phantom power supply (48V DC can be used when set for the Mic) Ground lift switch
A/D Converter	24 bit
THD	0.008% or less (+4dB input)

Line Output Module

D-2000DA1

- 4-channel, XLR connectors
- D/A converter: 24 bit
- THD: 0.008% or less

Model	D-2000DA1
Output	4 channels, +4dB*1/-10dB*1 (changeable), adaptable load of 600Ω or more, balanced (electronically-balanced)/ unbalanced (changeable), XLR-3-32 equivalent
D/A Converter	24 bit
THD	0.008% or less

CobraNet Interface Module

D-2000CB

- Allows audio transmission among D-2008SP's.

Model	D-2000CB
Network I/F	CobraNet*: 100BASE-TX, PRIMARY/SECONDARY 2 system, RJ45 connector, enables decentralized installation. (audio transmission only) Connection Cable: shielded twisted pair (STP) CAT-5 or higher LAN cable (note: this network should be completely independent of other LAN.) Number of D-2008SP Connection: Max. 4 Switching Sub Stage: Max 7 Max Extend Distance: 100m (328.1ft) (connected via a switching hub)
Input	16 channels, 20/24 bit
Output	16 channels, 20/24 bit

*1 0 dB = 0.775V

** CobraNet* was developed by Cirrus Logic, a US company, and is network protocol utilizing Ethernet networks to perform high-quality multi-channel digital transmission. It allows using existing Ethernet equipment such as CAT-5 switching hubs.*

** AMX is a registered trademark of AMX corporation. Crestron is a registered trademark of Crestron Electronics Inc.*
CobraNet is a registered trademark of Cirrus Logic Corporation

Digital Mixers Modules - D-901, D-2000 and DP-K1

VCA Fader Unit

D-911

- Remote control of up to twelve inputs and eight outputs
- Eight programmable control switches and LED's
- Connects to D-984VC module via CAT-5 cables (maximum distance 100m / 328ft using CAT-5)

VCA Control Module

D-984VC

- Interface to D-911 Remote Controller via CAT-5 cables or configure custom interface
- Eight RJ-45 connectors
- Control up to 12 inputs, eight outputs
- Eight programmable switch closure inputs for activation of memory, volume up/down, channel on/off and stereo input selection
- Eight programmable relay outputs of memory, channel on/off, contact input status and stereo input selection

Mic/Line Input Module (24 bits Monaural Type)

D-921F

- Two balanced mic or line level inputs
- 24-bit A/D converters
- Adjustable input gain
- Phantom power
- XLR-F connectors

Mic/Line Input Module (24 bits Monaural Type)

D-921E

- Two balanced mic or line level inputs
- 24-bit A/D converters
- Adjustable input gain
- Phantom power
- Phoenix-style terminal block

Mic/Line Input Module (20 bits Monaural Type)

D-922F

- Two balanced mic or line level inputs
- 20-bit A/D converters
- Adjustable input gain
- Phantom power
- XLR-F connectors

Mic/Line Input Module (20 bits Monaural Type)

D-922E

- Two balanced mic or line level inputs
- 20-bit A/D converters
- Adjustable input gain
- Phantom power
- Phoenix-style terminal block connectors

Stereo Select Input Module

D-936R

- Four stereo connector pairs
- Unbalanced line level
- Individual input gain
- Programmable switching between connector pairs or summing mode
- Occupies two input channels
- RCA pin jack connectors

AES/EBU Digital Input Module

D-972AE**

- Four digital outputs
- AES/EBU format
- XLR-M connectors
- Maximum distance: 328ft (100m)

AES/EBU Digital Input Module

D-923AE**

- Two digital inputs
- AES/EBU format
- XLR-F connector
- Maximum distance: 328ft (100m)

Line Output Module

D-971M

- Four balanced line level outputs
- XLR-M connectors

Line Output Module

D-971E

- Four balanced line level outputs
- Phoenix-style terminal block connectors

Line Output Module

D-971R

- Four stereo or mono sum line level outputs
- RCA pin jack connectors

Remote Control Module

D-981

- Eight programmable switch closure inputs for activation of memory, volume up/down, channel on/off and stereo input selection
- Eight programmable relay outputs of memory, channel on/off, contact input status and stereo input selection

Remote Control Module

D-983

- Twenty-four programmable switch closure inputs for activation of memory, volume up/down, channel on/off and stereo input selection
- Sixteen programmable relay outputs of memory, channel on/off, contact input status and stereo input selection

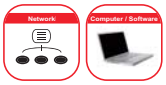
** Special Order Product

Integrated DSP and Control System

The DP-K1 is a 3U rack mountable Digital Audio Processor. It features Automatic Resonance Control (ARC) that automatically generates an optimum filter curve to improve sound clarity after measuring the acoustic characteristics in architectural spaces. It permits flexible configuration of inputs and outputs, from 2-IN/4-OUT to 8-IN/8-OUT using the optional modules. Each function is set by a PC using the dedicated software. The settings can be stored in the unit's internal memory and the stored preset memories can be recalled from the unit without connecting the PC. This rack-mount digital mixer / processor is suitable for installed sound applications such as houses of worship, sports facilities, convention centers, airports, and others.

»Digital Audio Processor

DP-K1



- Modular design allows up to 8 mic/line inputs and 8 line outputs (modules not included)
- Auto Resonance Control (ARC): Advanced measurement and processing algorithm improves speech intelligibility and sound quality in facilities with challenging acoustic environments
- Automatically identifies room mode frequencies and applies an inverse response curve to compensate for the measured room response
- Essential audio processing tools — compressors, gates, crossovers, multi-band filtering, parametric, high/low-pass, all-pass and notch filters, horn EQ, high/low shelving and output delay

»Software

TOA's DP-K1 Software can be downloaded at www.TOAcanada.com

Please refer to the Digital Mixer Modules - D-901, D-2000 and DP-K1 on page 27.

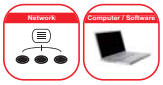
Model	DP-K1
Power Source	100 - 120 V AC, 50/60 Hz
Power Consumption	40 W (750 mA)
Frequency Response	20 Hz - 20 kHz, ±1 dB (+4 dB* input)
Input and Output	Max. 8 channels, modular construction (modules optional)
I/O Configuration	2-IN/4-OUT, 2-IN/8-OUT, 4-IN/4-OUT, 4-IN/8-OUT, 6-IN/4-OUT, 6-IN/8-OUT, 8-IN/4-OUT, 8-IN/8-OUT
ARC	(ARC = Automatic Resonance Control Function) Parametric equalizer: 20 Hz - 20 kHz, +12 dB, Q: 0.267 - 69.249
Level Control	- ∞ to +12 dB (0.5 dB steps), with polarity selector
Equalizer/Filter	Parametric equalizer: 20 Hz - 20 kHz, +12 dB, Q:0.267 - 69.249; Filtering: High-pass filter: 20 Hz - 20 kHz, 6 dB/oct, 12 dB/oct; Low-pass filter: 20 Hz - 20 kHz, 6 dB/oct, 12 dB/oct; Notch filter: 20 Hz - 20 kHz, Q: 8.651 - 69.249; All-pass filter: 20 Hz - 20 kHz, Q: 0.267 - 69.249; High shelving filter: 6 - 20 kHz, +12 dB; Low shelving filter: 20 - 500 Hz, +12 dB; Horn equalizer: 20 kHz, 0 to +18 dB (0.5 dB steps); Crossover filter: 20 Hz - 20 kHz, 6 dB/oct, 12 dB/oct, 18 dB/oct, 24 dB/oct
Compressor	Threshold: -16 to +24 dB* (1 dB steps); Ratio: 1:1, 2:1, 3:1, 4:1, 8:1, 12:1, 20:1, ∞:1; Attack time: 0.02 - 100 ms; Release time: 10 ms - 5 s
Noise Gate	Threshold: - ∞ to -26 dB* (1 dB steps); Attack time: 0.1 - 100 ms; Release time: 20 ms - 5 s
Delay	Delay time: 0 - 682.0 ms (0.021 ms steps)
Preset Memory	8
Auxiliary Function	Key lock function
Setting Software	OS: Windows 2000/XP/Vista (32-bit edition), Windows 7 (32/64-bit edition); Control system: 10 BASE - T/100 BASE-TX, Auto-negotiation, RJ45 connector
Front Panel Section	Preset memory recall knob: 1; Input indicator: Green LED; Output indicator: Green LED
Module Slot (Rear Panel)	Input module slot: 4; Output module slot: 2; Remote control module slot: 1
Dimensions	482 (W) x 132.6 (H) x 320 (D) mm (18.98" x 5.22" x 12.6") (excluding projection)
Weight	7.4 kg (16.31 lb)
Accessory	Power cord (2 m (6.5 ft)) x 1, Module mounting bracket (preinstalled on the unit) x 2, rack mounting screw x 4, Blank panel (preinstalled on the unit) x 8, Module mounting screw (spare) x 4, CD (software) x 1
Option	Mic/line input module: D-921E, D-921F, D-922E, D-922F; Stereo input module: D-936R; Digital input module: D-923AE; Line output module: D-971E, D-971M, D-971R; Digital output module: D-972AE; Remote control module: D-981, D-983

* 0 dB = 0.775 V

Signal Processing Equipment

The DP-SP3 Digital Speaker Processor enables you to enhance your sound system easily and inexpensively. Designed specifically to work with speakers, the processor taps into characteristics of individual speakers and draws out their best possible performance, to help realize richer, more expressive sound in a variety of venues. The DP-SP3 has a built-in library of presets for the most popular TOA speakers, which enables you to enjoy well-balanced sound immediately, without going to the trouble of inputting complex parameter settings. In addition, a preset memory of up to 16 setting patterns allows you to instantly recall the setting you need for a particular venue. The processor is also packed with such essential audio processing functions as Equalizer, Crossover, Matrix, Compressor and Delay.

»Digital Speaker Processor



DP-SP3

- 24-bit, 96 kHz sampling for clear, high-quality and realistic sound, with a full sense of presence
- 10 filters on each input and 12 filters on each output
- 2 inputs & 6 outputs, and processor can work with a 3-way multi-amp system
- Setting and operation via a LAN connected PC with installation of the supplied intuitive control/ operation software
- Preset memory for up to 16 different setting patterns, for instant recall of patterns best suited to a particular venue

Signal Processing Equipment

Model	DP-SP3
Power Source	100 - 120 V AC, 60 Hz
Power Consumption	25 W
Frequency Response	20 Hz - 20 kHz, ±1 dB
Sampling Frequency	96 kHz
Dynamic Range	110 dB or more
Distortion	0.03% or less, 1 kHz, +4 dB* input/output, 20 Hz - 20 kHz BPF
Cross Talk	-80 dB or less, 1 kHz
Input	2 channels, +4 dB* (max. +24 dB*), 10 kΩ, electronically-balanced, removable terminal block (3P)
Output	6 channels, +4 dB* (max. +24 dB*), applicable load 600 Ω or more, electronically-balanced, removable terminal block (3P)
AD Converter	24 bits
DA Converter	24 bits
Equalizer/Filter	Parametric equalizer: 20 Hz - 20 kHz, ±15 dB, Q: 0.267 - 69.249; Filter: High-pass filter: 20 Hz - 20 kHz, 6 dB/oct, 12 dB/oct; Low-pass filter: 20 Hz - 20 kHz, 6 dB/oct, 12 dB/oct; Notch filter: 20 Hz - 20 kHz, Q: 8.651 - 69.249; All-pass filter: 20 Hz - 20 kHz, Q: 0.267 - 69.249; High shelving filter: 5 - 20 kHz, ±15 dB; Low shelving filter: 20 - 500 kHz, ±15 dB; Horn equalizer: 20 kHz, 0-18 dB in 0.5 dB steps
Crossover	2 ways, 3 ways, 4 ways; Crossover filter: 20 Hz - 20 kHz, 6 dB/oct, 12 dB/oct, 18 dB/oct, 24 dB/oct, -15 to +12 dB, polarity switchable; Delay: 0 - 170.656 ms in 0.01 ms steps
Compressor	Threshold: -20 to +20 dB* in 1 dB steps; Ratio: 1:1, 1.1:1, 1.2:1, 1.3:1, 1.5:1, 1.7:1, 2:1, 2.3:1, 2.6:1, 3:1, 4:1, 7:1, 8:1, 10:1, 12:1, 20:1, ∞:1; Attack time: 0.2 ms - 5s; Release time: 10 ms - 5s
Delay	Delay time: 0 - 682.656 ms in 0.01 ms steps
Matrix	2 x 6
Contact Input	4 channels, open voltage: 5 DC, short-circuit current: 5 mA, removable terminal block (5 P), control function: preset memory selection, volume control, and mute
Network	Network I/F: 1 channel of 10BASE-T/100BASE-TX (auto-negotiation) RJ45 connector, connection via switching hub; Network protocol: TCP/IP; Connection cable: Shielded CAT-5 or higher twisted pair cable for LAN (CAT-5-STP or better); Max. cable length: 100 m (109.36 yd) (between DP-SP3 and switching hub)
Dimensions	482 (W) x 44 (H) x 289 (D) mm (18.98" x 1.73" x 11.38")
Accessory	Power supply cord (2 m (6.5 ft)) x 1, removable terminal plug (3P) x 8, Removable terminal plug (5P) x 1, CD-ROM (containing setup software) x 1

* 0 dB = 0.775 V

Digital Ambient Noise Controller

Digital Ambient Noise Controller

DP-L2

- Digital ambient noise control (ANC) function with 4-LED metering automatically adjusts output gain to match changes in ambient noise levels
- Exclusive TOA algorithm distinguishes unit output sound level from ambient noise levels, for more accurate control
- Monitor output for sound picked up by the ambient noise sensor microphone
- Automatic level control feature with 4-LED metering maintains input signal at a constant level by adjusting input signals to appropriate levels when the sound level is too low
- Requires ambient noise microphone

* 0 dB = 0.775 V

Model	DP-L2
Power Source	100 - 120 V AC, 60 Hz
Power Consumption	20 W (300 mA)
Frequency Response	20 Hz - 20 kHz, ±1 dB
Sampling Frequency	48 kHz
Dynamic Range	Over 108 dB (IHF-A weighted)
Distortion	Under 0.006%, 1 kHz, +4 dB* input/output (20 - 20 kHz BPF)
Input	Sensor input (Ambient noise sensor microphone input): +4/-48 dB* changeable, 10 kΩ, electronically-balanced, removable terminal block (4 pins), phantom power (+15 V DC, can be turned on or off with Phantom switch) with +15 V DC terminal; Input 1,2: +4/-8/-20 dB* changeable, 15 kΩ, electronically-balanced, removable terminal block (3 pins)
Output	Monitor output: +4 dB*, 600 Ω, electronically-balanced, removable terminal block (3 pins); Output 1,2: +4 dB*, 600 Ω, electronically-balanced, removable terminal block (3 pins)
AD Converter	24 bits
DA Converter	24 bits
Automatic Level Control Function	Level meter (4 LED meters), Automatic input signal level control function; Automatic input sensitivity setting function: +4/-8/-20 dB*; Noise gate level setting: -99 to -3 dB
Ambient Noise Control Function	Level meter (4 LED meters), BGM/Announce level control function; Automatic sensor input reference level measuring function; Sensor input reference level fine adjustment function; Maximum output signal level control: -15 to 0 dB; Maximum output signal level control: -18 to -3 dB, Sample time setting: 10 s, 20 s, 30 s, 1 min, 5 min; Gain ratio setting: (Ambient noise: Output signal level) 6:3, 5:3, 4:3, 3:3, 3:4, 3:5, 3:6; Ambient noise measuring frequency setting: 20 - 20 kHz, 3 points
Maximum Output Signal Level Control Function	-12, -6, 0, +4, +6, +12, +18, +24 *dB
Input Level Indicator	8 LEDs indicator
Output Level Indicator	8 LEDs indicator
Other Feature	Phantom power switch (sensor input), key lock function, Ground lift switch (INPUT 1, INPUT 2), Input/Output bypass function in power off
Dimensions	482 (W) x 44 (H) x 303 (D) mm (18.98" x 1.73" x 11.93")
Accessory	Power supply cord (2 m (6.5 ft)) x 1, removable terminal plug (4P) x 1, Removable terminal plug (3P) x 5

Optional Accessories: DP-L2

Ceiling Mount Microphone

AN-9001

For specifications and complete details see page 36.

Amplifiers

Micro Amplifier

The AV Series Micro Amplifier introduces a new standard in small amps for plenum use. With ultra-compact size, a flexible compliment of inputs & power configuration, control features and carrying both UL2043 & Energy Star 3.0 certification, the AV-20D is an ideal choice for corporate meeting rooms, POS/signage & kiosks or any place where space and placement limitations are a factor.

Micro Amplifier

AV-20D AM
AV-60S-AM

AV-20D AM

AV-60S-AM

- Micro Class D amplifier for use in meeting/board rooms & signage applications
- UL 2043-rated for plenum installation
- Energy Star certified including Auto Off/Standby
- Small size (approx. 6" x 6" x 1.75") allows convenient & flexible placement.
- L/R Line inputs via: removable Transformer-Balanced Terminal Block, 1/8" TRS mini-jack and RCA connections
- Bass & Treble Controls
- Input signal present (-20dB) and Peak LED indicators
- Clip Limiter prevents distortion due to overload.
- Remote Volume Control port for use with 10k Ohm pot

Model		AV-20D AM	AV-60S-AM
Power Source		100V-240V AC, 50Hz/60Hz	
Rated Output		15W x 2 @ 8 Ohms, 20W x 2 @ 4 Ohms, 40W x 1 @ 8 Ohms (Bridge)	60W @ 4 Ohms, 60W @ 70V
Power Consumption	Rated Output	63W	Less than 85W @ 70V, Less than 110 W @ 4 Ohms
	Idle	<6 Watt	Less than 10W @ 70V, Less than 7W @ 4 Ohms
	Power Save Mode	<1 Watts	
Input	Line 1	-10/-20dB* (selectable), 10 K ohms, transformer-balanced, removable terminal block	
	Line 2	-10/-20dB* (selectable), 10 K ohms, unbalanced, 3.5mm stereo jack	
	Line 3	-10/-20dB* (selectable), 10 K ohms, transformer isolated unbalanced, RCA jacks	-10/-20dB* (selectable), 10 K ohms, unbalanced, RCA jacks
Output		Speaker output, removable terminal block (4P)	Speaker output, removable terminal block (2P)
Dimensions		150 (W) x 44 (H) x 156 (D) mm (5.9" x 1.73" x 6.14")	
Weight		1 kg (2.2 lbs)	1.12 kg (2.5 lbs)
UL Standards		UL 2043	
Optional Accessories		WPB-20, MB-AV20RM, MT-S0301	

*0 dB = 1 V

Micro Amplifier Optional Accessories

Metal Rack Mount Kit

MB-AV20RM

(1 or 2 amplifiers are mountable in 1 unit)

Surface & Pole Mount Bracket

WPB-20

Matching Transformer

MT-S0301

- The MT-S0301 allows for a 30W @ 70V output by connecting to the bridge output for AV-20D

Accessory Reference on page 103; Amplifier Selection Chart on page 111

CA Series Mobile Mixer Amplifiers

CA Series Mobile Mixer Amplifiers

CA-115 15W
CA-130 30W
CA-160 60W

- Mobile mixer/amplifiers for remote applications
- 12 VDC powered
- Two microphone inputs with volume controls
- Supports 4 or 8 ohm speaker loads
- Handheld microphone included - unidirectional, dynamic-type with talk switch, 6' cord and mounting hardware
- Auxiliary input for connecting an external CD player, radio, tape deck or tone generator
- Mounting hardware included - mounts under dashboard or into standard DIN-size console cutout
- Applications: Automobiles; Boats; Buses; Construction Vehicles; Emergency Vehicles; Law Enforcement Vehicles; Parade Floats; Theme Park Rides

Model	CA-115	CA-130	CA-160
Power Source	Standard voltage: 14 V DC; Usable voltage: 10 - 16 V DC (12 V battery used)		
Power Consumption	3 A or less at rated output	5 A or less at rated output	9 A or less at rated output
Rated Output	15 W	30 W	60 W
Output Impedance	4 Ω (BRN), 8 Ω (ORG), Common (WHT) Changeable by changing lead wire connections		
Distortion	Less than 5% (at 1 kHz rated output)		
Frequency Response	100 Hz - 10 kHz		
Input	Mic 1, 2: 600 Ω, 4 mV, phone jack; AUX: 10 kΩ, 500 mV, phone jack		
Finish	Front panel: ABS resin, black; Case: Zinc plated steel sheet		
Dimensions	178 (W) × 50 (H) × 132 (D) mm (7" x 2" x 5.2") (mounting device excluded)	178 (W) × 50 (H) × 144 (D) mm (7" x 2" x 5.7") (mounting device excluded)	178 (W) × 50 (H) × 170 (D) mm (7" x 2" x 6.7") (mounting device excluded)
Weight	900 g (2 lbs)	1.1 kg (2.4 lbs)	1.2 kg (2.6 lbs)
Accessory	Microphone holder x 1, Mounting bracket x 1, Mounting screw x 1 set, Fuse (4 A) x 1, Connection cord x 1 set		
Accessory Microphone	Unidirectional dynamic type with talk switch Impedance: 600 Ω Sensitivity : -53 dB (1 kHz, 0 dB = 1 V/Pa)		

A-2000 Series Mixer Power Amplifiers

TOA's A-2000 Series is an economical performance mixer power amplifier suited for broadcasting paging or background music in schools, offices, shops, factories, mosques, churches and large rooms.

Mixer Power Amplifier

A-2060 60W
A-2120 120W
A-2240 240W

- Cost effective and durable mixer power amplifier
- User friendly front panel allows easy operation
- 2 electronically balanced microphone inputs, 2 AUX inputs and recording output.
- Phantom power at MIC 1
- Wide tone-control adjustment range of -/+10 dB for both bass and treble
- 100V / 70V line or 4Ω speaker outputs

Model	A-2060	A-2120	A-2240
Power Req.	120V AC		
Rated Output	60W	120W	240W
Frequency Response	50 Hz – 20 kHz (±3dB)		
Input	MIC 1, 2: -60 dB*, 600Ω, balanced, M3.5 screw terminal, distance between barriers: 8.3 mm (0.33") TEL: -10 dB*, 10 kΩ, balanced, M3.5 screw terminal, distance between barriers: 8.3 mm (0.33") AUX 1, 2: -20 dB*, 10 kΩ, unbalanced, RCA pin jack		
Output	Speaker Out: Balanced (floating), M3.5 screw terminal, distance between barriers: 8.3m (0.33"); High impedance: 83Ω (70V), 10Ω (25V); Low impedance: 4Ω (15.5V); Rec out: 0 dB* 600Ω, unbalanced, RCA pin jack	Speaker Out: Balanced (floating), M3.5 screw terminal, distance between barriers: 8.3m (0.33"); High impedance: 42Ω (70V), 5Ω (25V); Low impedance: 4Ω (22V); Rec out: 0 dB* 600Ω, unbalanced, RCA pin jack	Speaker Out: Balanced (floating), M3.5 screw terminal, distance between barriers: 8.3m (0.33"); High impedance: 21Ω (70V), 2.6Ω (25V); Low impedance: 4Ω (31V); Rec out: 0 dB* 600Ω, unbalanced, RCA pin jack
Phantom Power	DC +21V (MIC 1)		
S/N ratio	Over 60dB		
Tone Control	Bass: ±10dB at 100Hz; Treble: ±10dB at 10kHz		
Muting	MIC 1, MIC 2, and TEL have a priority function to attenuate AUX1 and AUX2 input signals by 30 dB. (Sensitivity level for MIC 1, MIC 2 , TEL adjustable) Priority level among MIC 1, MIC 2 and TEL is the same.		
Dimensions	420 (W) × 100.9 (H) × 280.3 (D) mm (16.54" x 3.97" x 11.04")		420 (W) × 100.9 (H) × 360.3 (D) mm (16.54" x 3.97" x 14.19")
Weight	7.5 kg (16.53 lbs)	10.8 kg (23.15 lbs)	15.5 kg (34.17 lbs)

*0 dB = 1 V

Amplifier Selection Chart on page 111

9000M2 Series Modular Digital Matrix Mixer/Amplifiers

The TOA 9000M2 Series Digital Matrix Mixer/Amplifiers redefines the conventional mixer/amplifier category by combining a modular matrix mixer, digital signal processor (DSP) and amplifiers in a compact, two rack space package. The versatile new series is ideal for multi-zone paging, music distribution and room-combining applications. The 9000 Series allows for easily configured, custom systems with up to eight mic/line inputs and eight outputs. Each 9000M2 Series chassis has two output channels with built-in DSP, including ; ten band parametric EQ, compressor, delay and more. Input and output modules include additional DSP. A new integrated operating mode provides powerful functionality for both simple mixing and complex multi-zone paging applications. Features include telephone zone paging, automatic microphone mixing and ambient noise control.

Modular Digital Matrix Mixer

M-9000M2

- Flexible modular design - up to 8 mic/line inputs and 8 outputs
- Detailed GUI software screens make even complex settings intuitive and easy to understand
- Any of the 30 EQ presets appropriate to the TOA speakers used may be selected for each output
- Up to 16 flush-mount remote panels connectable
- Programmed operating system - 32 scene memories and 32 paging memories
- Dual Channel Digital Signal Processor (DSP) on Input & Output channels:
  10-Band Parametric EQ/High and Low Pass Filters/Bass and Treble/Loudness/Compressor/Gate/Ducker/NOM (Automix)/ Delay (Output channel only)/TOA Speaker EQ Presets (Output channel only)/ DSP included on M-9000M2 Mainframe Outputs,D-001T, D-001R and T-001T modules (modules on page 36)

Model	A-9120SM2	A-9240SHM2	M-9000M2
Power Source	120 V AC, 60 Hz		
Power Consumption	150 W	250 W	40 W
Audio Input	Max. 8 channels, modular construction (modules optional) Power amplifier input: 0 dB*1, 10 kΩ, RCA pin jack		Max. 8 channels, modular construction (modules optional)
Audio Output	Preamplifier output 1: 0 dB*1, 300Ω, unbalanced, RCA pin jack Preamplifier output 2: 0 dB*1, 600 Ω, unbalanced, removable terminal block (3 pins)		Preamplifier output 1, 2: 0 dB*1, 600 Ω, balanced, removable terminal block (3 pins)
	Speaker output: Removable terminal block (7 pins); Direct: 120 W, 4Ω, unbalanced; Transformer: 120 W, 8Ω 25V & 70V, balanced	Speaker output: 240 W, 21 Ω, BTL output, removable terminal block (4 pins)	
Module Slot	Analog input (slot 1 - 8): -10 dB*1, 10 kΩ, unbalanced; Digital input (slot 1 - 4): 24 bit/48 kHz; MIX output (slot 1 - 8): -14 dB*1, 330 Ω (CH 1 prefader output), unbalanced; Digital output (slot 5 - 7): 24 bit/48 kHz; Power supply (slot 1 - 8): +24 V, -24 V, +6 V DC		
Digital Audio Signal Reference Level	-20 dBFS		
Power Bandwidth	(D): 20 Hz - 20 kHz, 0.02% THD (T): 50 Hz - 20 kHz, 0.5% THD	20 Hz - 20 kHz, 0.008% THD	
Frequency Response	Power amplifier section: 20 Hz - 20 kHz, +0, -1 dB Analog input module to speaker output: 20 Hz - 20 kHz, +1, -3 dB		20 Hz - 20 kHz, +1, -3 dB
Total Harmonic Distortion	Power amplifier section: 0.0008% (22 kHz LPF, 1 kHz, rated power) Analog input module to speaker output: 0.008% (22 kHz LPF, 1 kHz, rated power)		0.008% (at 22 kHz LPF, 1 kHz, +10 dB*1 output)
S/N Ratio	At Input short, 20 - 20,000 Hz, set to ALL FLAT or OFF setting; Output volume min.: 90 dB (preamplifier output); Output volume max.: 61 dB (preamplifier output, input 1 volume: 0 dB, other inputs: OFF); Power amplifier section: 110 dB		At Input short, 20 Hz - 20 kHz, set to ALL FLAT or OFF setting; Output volume min.: 90 dB; Output volume max.: 61 dB (Input 1 volume: 0dB, Other Inputs: OFF)
Cross Talk	Over 64 dB (at 20 kHz)		
Tone Control	Bass: ±12 dB (at 100 Hz), Treble: ±12 dB (at 10 kHz)		
Parametric Equalizer	10 bands, Frequency: 20 - 20,000 Hz, 31 points, Variable range: ±12 dB, Q: 0.3 - 5		
Speaker Equalizer	10 (set up software has 30 TOA speaker presets)		
High-pass Filter	-12 dB/oct, Variable frequency range: 20 - 20 kHz, 31 points		
Low-pass Filter	-12 dB/oct, Variable frequency range: 20 - 20 kHz, 31 points		
Compressor	Depth: 1 - 5		
Delay	0 - 40 ms (1 ms steps), maximum 40 ms (CH 1 + CH 2) (mixer mode only)		
Scene/Event Memory	32		
Auxiliary Function	Key lock function		
Control Input/Output	RS-232C*2, D-sub connector (9P, female); Control input: 4 inputs, no-voltage make contact input, open voltage: 3.3 V DC, short-circuit current: Under 1 mA, removable terminal block (14 pins); Control output: 4 outputs, open collector output, withstand voltage: 27 V DC, control current: 50 mA, removable terminal block (14 pins); Remote volume: 2 channels, connect a 10 kΩ/linear taper variable resistor or input DC voltage of 0 to +10 V, removable terminal block (14 pins)		
Operating Temperature	-10° C to +40° C (14° F to 104° F)		
Operating Humidity	35% to 80% RH (no condensation)		
Finish	Panel: Aluminum, hair-line, black; Case: Surface-treated steel plate, black, paint		
Dimensions	420 (W) × 107.6 (H) × 355 (D) mm (16.54" x 4.24" x 13.98")	420 (W) × 107.6 (H) × 395 (D) mm (16.54" x 4.24" x 15.55")	420 (W) × 107.6 (H) × 353 (D) mm (16.54" x 4.24" x 13.9")
Weight	13kg (28.66 lbs)	11 kg (24.25 lbs)	6 kg (13.23 lbs)
Accessory	Power cord (2m (6.56ft)) x 1, Rack mounting bracket x 2, Bracket mounting screw x 4, Blank panel x 7, Blank panel mounting screw x 14, Removable terminal plug (3 pins) x 1, Removable terminal plug (7 pins) x 1,Removable terminal plug (14 pins) x 1 , CD x 1	Power cord (2m (6.56ft)) x 1, Rack mounting bracket x 2, Bracket mounting screw x 4, Blank panel x 7, Blank panel mounting screw x 14, Removable terminal plug (3 pins) x 1, Removable terminal plug (4 pins) x 1, Removable terminal plug (14 pins) x 1 , CD x 1	Power cord (2m (6.56ft)) x 1, Rack mounting bracket x 2, Bracket mounting screw x 4, Blank panel x 7, Blank panel mounting screw x 14, Removable terminal plug (3 pins) x 1, Removable terminal plug (14 pins) x 1 , CD x 1

*1 0dB = 1V; *2 Allowing it to be controlled by a control system such as AMX and Crestron through RS-232C port. (D) = Direct, (T) = Transformer

Note: AMX is a registered trademark of AMX Corporation. Crestron is a registered trademark of Crestron Electronics, Inc.

9000M2 Series Modular Digital Matrix Mixer/Amplifiers

Digital Matrix Mixer/Amplifier

A-9060DHM2
A-9120DHM2
A-9060SM2
A-9120SM2
A-9240SHM2

- Flexible modular design - up to 8 mic/line inputs and 8 outputs
- Detailed GUI software screens make even complex settings intuitive and easy to understand
- Any of the 30 EQ presets appropriate to the TOA speakers used may be selected for each output
- Up to 16 flush-mount remote panels connectable
- Programmed operating system - 32 scene memories and 32 paging memories
- Up to 12 filters and compressor setting can be applied to each input-output channel

Please see the 9000 Series Modules on page 36.

Model	A-9060DHM2	A-9120DHM2	A-9060SM2
Power Source	120 V AC, 60 Hz		
Power Consumption	150 W	250 W	100 W
Audio Input	Max. 8 channels, modular construction (modules optional) Power amplifier input 1, 2: 0 dB*1, 10k Ω, RCA pin jack		
Audio Output	Preamplifier output 1, 2: 0 dB*1, 300Ω, unbalanced, RCA pin jack		Preamplifier output 1: 0dB*1, 300Ω, unbalanced, RCA pin jack; Preamplifier output 2: 0 dB*1, 600Ω, balanced, removable terminal block (3 pins)
	Speaker output 1, 2: 60W, 83Ω x 2, BTL output, removable terminal block (4 pins)	Speaker output 1, 2: 120W, 41Ω x 2, BTL output, removable terminal block (4 pins)	Speaker Output: Removable terminal block (7 pins); Direct: 60W, 4Ω, unbalanced, Transformer: 60W, 8Ω 25V & 70V, balanced
Module Slot	Analog input (slot 1 - 8): -10 dB*1, 10 kΩ, unbalanced; Digital input (slot 1 - 4): 24 bit/48 kHz; MIX output (slot 1 - 8): -14 dB*1, 330Ω (CH 1 prefader output), unbalanced; Digital output (slot 5 - 7): 24 bit/48 kHz; Power supply (slot 1 - 8): +24 V, -24V, +6V DC		
Digital Audio Signal Reference Level	-20 dBFS		
Power Bandwidth	20 Hz - 20 kHz, 0.008% THD		(D): 20 Hz - 20 kHz, 0.02% THD (T): 50 Hz - 20 kHz, 0.5% THD
Frequency Response	Power amplifier section: 20 - 20,000 Hz, +0, -1 dB; Analog input module to speaker output: 20 Hz - 20 kHz, +1, -3 dB		
Total Harmonic Distortion	Power amplifier section: 0.0008% (22 kHz LPF, 1 kHz, rated power) Analog input module to speaker output: 0.008% (22 kHz LPF, 1 kHz rated power)		
S/N Ratio	At Input short, 20 Hz - 20 kHz, ALL FLAT or OFF setting Output volume min.: 90dB (preamplifier output) Output volume max.: 61dB (preamplifier output, input 1 volume: 0 dB, other inputs: OFF) Power amplifier section: 110dB		
Cross Talk	Over 64 dB (at 20 kHz)		
Tone Control	Bass: ±12 dB (at 100 Hz) Treble: ±12 dB (at 10 kHz)		
Parametric Equalizer	10 bands, Freq: 20 Hz - 20 kHz, 31 points, variable range: ± 12 dB, Q: 0.3 - 5		
Speaker Equalizer	10 (set up software has 30 TOA speaker presets)		
High-pass Filter	-12 dB/oct, variable frequency range: 20 Hz - 20 kHz, 31 points		
Low-pass Filter	-12 dB/oct, variable frequency range: 20 Hz - 20 kHz, 31 points		
Compressor	Depth: 1 - 5		
Delay	0 - 40 ms (1 ms steps), maximum 40 ms (CH1 + CH2) (Mixer mode only)		
Scene/Event Memory	32		
Auxiliary Function	Key lock function		
Control Input/Output	RS-232C*2; D-sub connector (9P, female); Control input: 4 input, no-voltage make contact input, open voltage: 3.3V DC, short-circuit current: Under 1 mA, removable terminal block (14 pins); Control output: 4 outputs, open collector output, withstand voltage: 27V DC, control current: 50 mA, removable terminal block (14 pins); Remote volume: 2 channels, connect a 10k Ω/linear taper variable resistor or input the DC voltage of 0 to +10 V, removable terminal block (14 pins)		
Operating Temperature	-10° C to +40° C (14° F to 104° F)		
Operating Humidity	35% to 80% RH (no condensation)		
Finish	Panel: Aluminum, hair-line, black; Case: Surface-treated steel plate, black paint		
Dimensions	420 (W) × 107.6 (H) × 395 (D) mm (16.54" x 4.24" x 15.55")		420 (W) × 107.6 (H) × 355 (D) mm (16.54" x 4.24" x 13.98")
Weight	9kg (19.84lbs)	11kg (24.25 lbs)	
Accessory	Power cord (2 m (6.56ft)) x 1, Rack mounting bracket x 2, Bracket mounting screw x 4, Blank panel x 7, Blank panel mounting screw x 14, Removable terminal plug (4 pins) x 1, CD x 1, Removable terminal plug (14 pins) x 1		Power cord (2 m (6.56ft)) x 1, Rack mounting bracket x 2, Bracket mounting screw x 4, Blank panel x 7, Blank panel mounting screw x 14, Removable terminal plug (3 pins) x 1, CD x 1, Removable terminal plug (14 pins) x 1

*1 0dB = 1V; *2 Allowing it to be controlled by a control system such as AMX and Crestron through RS-232C port.
(D) = Direct, (T) = Transformer
Note: AMX is a registered trademark of AMX Corporation. Crestron is a registered trademark of Crestron Electronics, Inc.

Amplifier Selection Chart on page 111

9000M2 Series Modular Digital Matrix Mixer/Amplifiers

Model	Mic/Line	Digital Signal Processor	Power Amplifier Output(s)	Line Outputs
A-9060SM2	Up to 8 (4x **D-001T**)	2 Channels	1x 60 W @ 25/70V, 4/8 ohms	Up to 7 (1 built in plus 3x **T-001T**)
A-9120SM2	Up to 8 (4x **D-001T**)	2 Channels	1x 120 W @ 25/70V, 4/8 ohms	Up to 7 (1 built in plus 3x **T-001T**)
A-9240SHM2	Up to 8 (4x **D-001T**)	2 Channels	1x 240 W @ 70V	Up to 7 (1 built in plus 3x **T-001T**)
A-9060DHM2	Up to 8 (4x **D-001T**)	2 Channels	2x 60 W @ 70V	Up to 6 (3x **T-001T**)
A-9120DHM2	Up to 8 (4x **D-001T**)	2 Channels	2x 120 W @ 70V	Up to 6 (3x **T-001T**)
M-9000M2	Up to 8 (4x **D-001T**)	2 Channels	2x Line Level	Up to 8 (2 built in plus 3x **T-001T**)
P-9060DH	--	--	--	--
P-9120DH	--	--	--	--

Power Amplifier

P-9060DH 60W
P-9120DH 120W

- 2-Channel Power Amplifiers with 70.7V outputs
- 2-Channel Power Amplifier models feature flexible output power allowing 50% power from one amplifier channel to be allocated to the second amplifier channel
- Channel 1 & 2 inputs balanced (H=Hot, C=Cold and E=Shield) with selectable input sensitivity: 0dB or -20dB)
- Channel 1 input to ALL selectable switch
- 2 RU Rack Mounting hardware included
- Front panel LED indicators for: Protect, Peak, Signal and Power

Model	P-9060DH	P-9120DH
Power Source	120 V AC, 60 Hz	
Power Consumption	225W (rated output), 106 W (UL60065)	404 W (rated output), 208 W (UL60065)
Output	Speaker output CH 1, CH 2: 60W, 83Ω x 2, BTL output (70V line), M4 screw terminal, distance between barriers: 9 mm (0.35")	Speaker output CH 1, CH 2: 120W, 41Ω x 2, BTL output (70V line), M4 screw terminal, distance between barriers: 9 mm (0.35")
Input	CH 1, CH 2 input: -20 dB* or 0 dB* (switchable), 10 kΩ, electronically balanced, removable terminal block CH 1 mode ON/OFF switch (ON: CH 1 to All ch., OFF: Each ch)	
Power Band Width	20 Hz - 20 kHz, 0.08% T.H.D.	
Frequency Response	20 Hz - 20 kHz ±1, -3 dB	
S/N Ratio	At input short, 20 Hz - 20 kHz, Input level switch in 0 dB* position; Output volume min: 105 dB, Output volume max: 97 dB	
Total Harmonic Distortion	0.008% (22 kHz LPF, 1 kHz, rated output, input level switch in 0 dB* position)	
Function	Output disconnected for approx. 5 s after switching power on	
Dimensions	420 (W) x 107.6 (H) x 406 (D) mm (16.54" x 4.24" x 15.98")	
Weight	8.2 kg (18.08 lbs)	10 kg (22.05 lbs)
Accessories	Power cord 2m (6.56 ft) x 1, Volume control cover (YA-920) x 2, Rack mount bracket x 2, Bracket mounting screw (M4 x 16) x 4, Removable terminal plus (3 pins) x 2, Terminal cover x 1, Terminal cover mounting screw (M4 x 8) x 2	

*0 dB = 1 V

Optional Accessory

Optional Volume Control Cover *(included)*

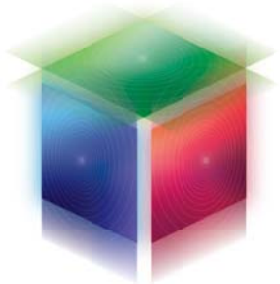
YA-920

Amplifier Selection Chart on page 111

VISIT WWW.TOACANADA.COM FOR FREE DOWNLOADS AND PRODUCT UPDATES!

Download for FREE:

- 900 Series Module Guide
- 9000 Series Application Guide
- Amplifier Guide
- Architectural & Engineering Guide
- Speaker Guide
- Cookbooks
- Brochures, and more.



Download FREE Software:

- 9000M2 Series Software
- AM-1 Software, iOS
- D-2000 Software
- D-901 Software
- DP-K1 Software
- DP-SP3 Software
- M-864D Software, iOS
- N-8000 Software
- NX-100 Software
- Speaker (SPV) Software
- Trantec Wireless Microphone Software

9000M2 Series Modular Digital Matrix Mixer/Amplifiers

9000 Series Modules

Ambient Noise Control Module

AN-001T

- Automatically adjusts output gain to compensate for changes in ambient noise level
- Each input can be assigned to control a specific output
- Two inputs with +24VDC phantom power for condenser mics
- 14 preset gain ratios
- Accessory sensing microphone available, model AN-9001
- Maximum two per chassis

Input/Output Control Module

C-001T

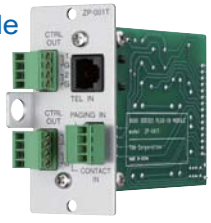
- Eight assignable control inputs for activating event volume, up/down, mute, power on/off, emergency mute or synch on/off
- Eight assignable control outputs for activating external relays
- Removable terminal block
- Maximum one per chassis

Dual Line Output Expansion Module with DSP

T-001T

- Two balanced line outputs
- Digital signal processing (10-Band Parametric EQ, Bass/ Treble, Loudness, High and Low Pass Filters, Compressor, TOA speaker EQ presets)
- Removable terminal block
- Maximum three per chassis

Telephone Zone Paging Module



ZP-001T

- Telephone access paging to up to eight zones
- Uses DTMF dialing to access amplifier and/or line outputs
- Dial up to eight output zones in one operation
- Analog extension or page port compatible
- Page port operation requires contact closure activation
- RJ-11 telephone jack and removable terminal blocks
- Maximum one per chassis

SIP Module

SP-11N

- VOIP phone paging module supported by SIP (Session Initiation Protocol)
- Auto-answer function
- Can be connected to IP network and directly registered as one SIP phone station on various SIP server management software
- VOX and mute functions
- Designed for use with TOA's 9000M2, 900, 700, and BG-2000 series amplifiers

Dual Mic/Line Input Module with DSP

D-001T

- Two balanced Mic / Line inputs
- Digital signal processing (10-Band Parametric EQ, Bass/ Treble, Loudness, High and Low Pass Filters, Compressor)
- Adjustable sensitivity (nine levels, -60 to -10 dBV)
- Phantom power (24 VDC)
- Removable terminal block
- Maximum four per chassis
- Required for VOX (Voice-Operated Switch) function and input level metering

Line Input Module with DSP

D-001R

- Two RCA phone inputs per channel provides stereo summing
- Digital signal processing
- 10-Band parametric EQ
- Bass/Treble
- Loudness
- High and low pass filters
- Compressor

Remote Control Module

RC-001T

- Allows use of up to 16 RS-485 remote control panels
- Bi-directional RS-485 communication provides control and status feedback display for each remote function
- Dual ports allow independent home runs for up to 8 modules ea.
- 24 VDC power adapter (optional accessory AD-246) required for each port used
- May be used in any control option slot on 9000M2 frame and even in addition to a C-001T when spare slots are available
- Required Module: ZM-9011, ZM-9012, ZM-9013, ZM-9014
- AD-246 - AC adapter

Optional Power Supply

AD-246

- AC adapter

Noise Masking Module

NM-01

- Generates a noise source to be used for sound masking and audio privacy applications
- Applications include; open-plan office environments or smaller spaces where distracting or private conversations need to be made unintelligible
- Allows connection of optional external signal processing equipment (i.e. an equalizer) as required
- Simple contact allows form muting of this noise source
- Designed for use with TOA's 9000M2, 900, 700, and BG-2000 series amplifiers

9000M2 Series Modular Digital Matrix Mixer/Amplifiers

9000 Series Modules

Remote Panel

ZM-9001

- Six buttons to activate preset selection or volume up/down
- Wiring: only one pair to chassis remote volume terminals
- Max. loop resistance: 100 ohms (3000 ft. 22AWG)
- Fits one gang electrical box
- Maximum two ZM-9001/ZM-9002 per chassis
- Uses built in 9000M2 REMT VOL port

Remote Volume Switch Panel

ZM-9002

- Four push buttons to activate preset selection or volume up/down
- Volume control knob
- Wiring: only one pair to chassis remote volume terminals
- Max. loop resistance: 100 ohms (3000 ft. 22AWG)
- Fits one gang electrical box
- Maximum two ZM-9001/ZM-9002 per chassis
- Uses built in 9000M2 REMT VOL port

Contact Closure Remote

ZM-9003

- Fits in a standard dual-gang electrical box
- Removable screw terminal connector block
- Works with contact inputs on 9000M2 mainframe and on C-001T
- Two momentary buttons and four latching buttons
- May be assigned to control program change, volume up/down, channel on/mute, emergency mute, power and paging prohibit function
- Removable terminal block
- Used built in 9000M2 REMT VOL port

Assignable Remote Button Panel

ZM-9011

- Fits in a standard dual-gang electrical box
- Four assignable buttons each with LED status indicator can control Xpoint settings (on/off, select), paging activation, scene and relay activation
- Assignable ID rotary adjustment on box
- Supplied matching decor plate
- Requires RC-001T and CAT5e shielded cable or better

Assignable Volume Controller

ZM-9012

- Fits standard single-gang electrical box
- Rotary encoder can be assigned to control any input or output volume
- Multiple input or outputs may be “ganged” for master volume control
- Multi-segment LED indicator provides visual volume level status
- Supplied matching decor plate
- Removable terminal block
- Requires RC-001T and CAT5e shielded cable or better

Assignable Remote Button Panel

ZM-9013

- Fits in a standard dual-gang electrical box
- Eight assignable buttons each with LED status indicator can control Xpoint settings (on/off, select), paging activation, scene and relay activation
- Assignable ID rotary adjustment on box
- Supplied matching decor plate
- Removable terminal block
- Requires RC-001T and CAT5e shielded cable or better

Assignable Remote Button Panel w/Volume Control

ZM-9014

- Fits in a standard dual-gang electrical box
- Four assignable buttons each with LED status indicator can control Xpoint settings (on/off, select), paging activation, scene and relay activation
- Assignable ID rotary adjustment on box
- Supplied matching decor plate
- Removable terminal block
- Requires RC-001T and CAT5e shielded cable or better

Ambient Noise Sensing Microphone

AN-9001

- Ceiling or wall-mount condenser microphone
- Fits one gang electrical box
- Use with AN-001T module or DP-L2 processor
- Electret condenser microphone
- Frequency Response: 100 - 10,000 Hz
- Phantom power (+24V) can be supplied for condenser microphone use

4-Zone Speaker Selector

SS-9001

- Switch up to four speaker lines on one amplifier output
- Two speaker amplifier inputs for Paging/BGM applications
- Works with built in 9000M2 I/O control output or optional C-001T module only
- Wall-mount bracket included
- Requires optional 24VDC power supply, model AD-246

Software

TOA’s 9000M2 Series Software can be downloaded at www.TOAcanada.com.

9000M2 Series Modular Digital Matrix Mixer/Amplifiers

9000 Series Optional Accessories

The cost-effective Multi-Zone Paging System is achieved with TOA's zone selectable remote paging microphone and speaker line selector. The Q-SS9012 Multi-Zone Speaker Selector has 2 amplifier inputs and 12 individual relay switches to select the amplifier connected to each 12 speaker line/zone. This allows up to 12 zones for paging and BGM distribution with a dual channel amplifier or simple paging system with only a one channel amplifier. TOA's new concept offers a real cost effective multi-zone paging system. TOA's multi zone paging system allows paging up to 12 zones, utilizing a single channel amplifier by activating the speaker line selector from the desktop remote microphone.

Remote Microphone

Q-RM9012

- High-sensitivity electret-condenser gooseneck mic for clear voice
- 12 zone select buttons, All Call, Clear
- 12 Contact Outs corresponding to buttons (RJ-45 connector for use with shielded Cat5 wiring)
- Connects to C-IN on 9000M2 (mainframe & equipped with C-001T)
- Optional AD-246 AC Adapter required

Speaker Selector

Q-SS9012

- 12 contact inputs and 12 speaker outputs. Power amp input is split into 12 zones with activation via contact closure
- Possible to expand number of 9000M2 paging zones along with conventional output zones (T-001T) up to 19 zones
- Can facilitate paging over BGM by switching between BGM output (amp input 2) and Page output (amp input 1)
- May work with internal or external amplifier
- 19" rack-mountable (using optional MB-15B)
- Optional AD-246 AC Adapter required

Model	Q-RM9012
Power Source	24 V DC from AC adaptor AD-246 or the equivalent
Power Consumption	80 mA or less
Audio Output	0 dB*, 600Ω, transformer balanced, RJ45 connector
Microphone	Unidirectional electret condenser microphone
Control Output	12 channels, open collector output, withstand voltage: 27V DC, control current: max. 50 mA, (2) RJ45 connectors
Number of Keys	12 zone selection keys, All call key, Cancel key, Talk key
Volume Control	Microphone volume control
Finish	ABS resin, black
Dimensions	190 (W) x 76.5 (H) x 215 (D) mm (7.48" x 3.01" x 8.46") (Gooseneck microphone excluded)
Weight	750 g (1.65 lbs)
Optional Accessory	AC Adaptor: AD-246

*0 dB = 1 V

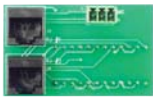
Model	Q-SS9012
Power Source	24 V DC from AC adaptor AD-246 or the equivalent
Power Consumption	400 mA or less
Power Handling	250W or less (70V / 100V line) per channel (IN1, IN2)
Control Input	12 channels, dry (no voltage contact closures, open voltage: 3.3V DC, short-circuit current: under 1 mA, removable terminal block (24 pins)
Speaker Terminal	Removable terminal block (2 pins, IN1, In2, Zone 1-12)
Control Terminal	Removable terminal block (24 pins)
Finish	Case: Surface-treated steel plate, black
Dimensions	420 (W) x 44 (H) x 123 (D) mm (16.54" x 1.73" x 4.84")
Weight	1.6 kg (3.53 lbs)
Accessory	Removable terminal plug (2 pins) x 2, Removable terminal plug (12 pins) x 3, Removable terminal plug (14 pins) x 1
Optional Accessory	AC Adaptor: AD-246, Rack mount bracket: MB-15B; Wall mount bracket: YC-850

*0 dB = 1 V

Optional Accessories Q-RM9012 and Q-SS9012

AC Adapter
AD-246

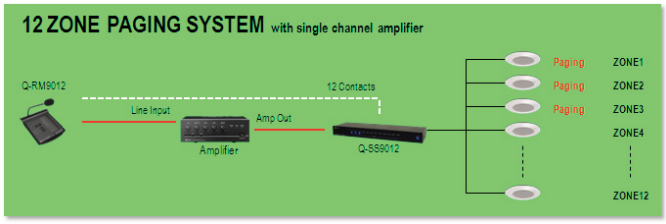
Connector board
IB-9012AM

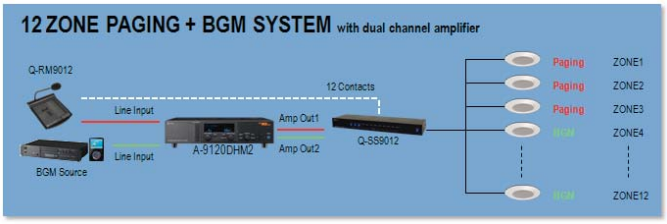


Rack Mount Bracket
MB-15B

Wall Mount Bracket
YC-850

Multi-Zone Paging System Examples





900 Series Amplifiers

TOA's A-900MK2 Series Mixer Power Amplifier controls and mixes up to eight independent input signals. The Mixer Power Amplifier delivers up to 30/60/120 watts of output power. Optional plug-in modules are available for use with mixer power amplifier to provide versatility for a wide range of operating applications.

8-Channel Mixer Preamplifier (UL version)

A-903MK2 30W
A-906MK2 60W
A-912MK2 120W

- Eight module slots accept any combination of TOA plug-in modules for custom system configurations
- Direct low-impedance output mode bypasses output transformer
- Dual mute bus permits multiple levels of paging priority using optional mute-type modules
- External mute terminals for activating mute function with external switch-closure
- Low cut switch to limit low frequency response
- Bridging input/output for input expansion or recording device
- Over-current and thermal protection circuitry prevents potential damage from overload, short-circuit and over-heating
- Optional rack-mount kit, model MB-25B (2 RU)
- Optional 900 Series Modules required

Model	A-903MK2	A-906MK2	A-912MK2
Type	8-channel mixer power amplifier		
Power Requirement	AC mains, 120 V, 60 Hz		
Power Consumption	60 W	100 W	180 W
Output Power	30 W RMS	60 W RMS	120 W RMS
Power Band Width	(D) 20 - 20,000 Hz, 0.5% THD, (T) 50 - 20,000 Hz, 0.5% THD		
Frequency Response	(D) 20 - 20,000 Hz, ±1 dB (T) 20 - 15,000 Hz, ±1 dB, (T) 20 - 20,000 Hz, +1 dB, -3 dB		
T.H.D	0.02% at 1 kHz, rated output		
Inputs	Eight Input Ports: Each port accepts any input modules. One Bridging Input/Output port		
Input Sensitivity /Impedance	Input Port #1 to #8: 100 mV/10 kΩ Bridging Input/Output: 100 mV/3.3 kΩ		
Preamp OUT /Power Amp IN	1000 mV into 600 Ω/1000 mV, 10 kΩ		
Outputs	Main (T): 4 Ω, 25 and 70 volts, balanced, Main (D): 8 Ω, unbalanced Aux: 10 kΩ, 1 V		
Output Regulation (1kHz)	(D) Less than 0.5 dB, no load to full load, (T) Less than 1.0 dB, no load to full load		
S/N Ratio (Band Pass 20 - 20,000 Hz) Tone defeat switch on	Master volume min: 90 dB Master volume max: 77 dB Power amplifier only: 105 dB		
Tone Controls	Bass: ±10 dB at 100 Hz, Treble: ±10 dB at 10 kHz		
Controls	8 Input gain control 1 Master gain control 1 Bass control 1 Treble control 1 Power ON/OFF switch 1 Tone defeat switch 1 Low-Cut switch (60 Hz, 6 dB/octave)		
Indicators	1 Power LED, 1 Protect LED, 1 Signal LED, 1 Normal LED, 1 Peak LED		
Protection	Self-protection, with AC fuse (inside)		
Connectors	Input No.1 to No.8: Card-edge connector Bridging, Mixer preamp. output, Power amp. input, Aux output: RCA phono jack Output: Screw-terminal strip Mute, Remote VR: Screw-terminal strip AC outlet: 3-pin grounding type AC power cord/plug: SJT, 3-prong type		
Temperature Range	-10°C - +60°C (12°F - 140°F)		
Finish	Black		
Dimensions (W×H×D)	16.54" (W) x 3.90" (H) x 12.52" (D) 420 × 99.1 × 318 mm	16.54" (W) x 3.90" (H) x 14.09" (D) 420 × 99.1 × 358 mm	
Weight	7.8 kg (17.20 lbs)	9.6 kg (21.16 lbs)	11.4 kg (25.13 lbs)
Accessories	Volume control cover: YA-920 x 4		
Option	Rack mounting bracket: MB-25B		

(T)=Transformer (D)=Direct

Optional Accessory

Rack Mount Kit
MB-25B

Volume Control Cover *(included)*
YA-920

Accessory Reference on page 103; Amplifier Selection Chart on page111

Please see 900 Series Modules on page 42.

900 Series Amplifiers

TOA's P-900MK2 Series Power Amplifier delivers up to 60/120/240 watts of output power. The Power Amplifier has an input port to accept one plug-in module.

Power Amplifier (UL version)

P-906MK2 60W
P-912MK2 120W
P-924MK2 240W

- Modular single channel power amplifiers for paging, background/ foreground music distribution and music/messaging-on-hold
- Input module slot accepts most TOA plug-in modules for custom system configurations
- Direct low-impedance output mode bypasses output transformer
- Direct input for connecting an external mixer or other source
- Selectable input sensitivity to accommodate high or low input levels
- Low cut switch to limit low frequency response
- Optional rack-mount kits: P-906/P-912MK2: MB-25B (2 RU) P-924MK2: MB-35B (3 RU)
- Optional 900 Series Modules required

Model	P-906MK2	P-912MK2	P-924MK2
Type	Power amplifier		
Power Requirement	AC mains, 120 V, 60 Hz		
Power Consumption	100 W	180 W	120 V / 3 A
Output Power	60 W RMS	120 W RMS	(D) 240 W RMS (T) 220 W RMS
Power Band Width	(D) 20 - 20,000 Hz, 0.5% THD (T) 50 - 20,000 Hz, 0.5% THD		
Frequency Response	(D) 20 - 20,000 Hz, ±1 dB (T) 20 - 15,000 Hz, ±1 dB, (T) 20 - 20,000 Hz, +1 dB, -3 dB		
T.H.D	0.01% at 1 kHz, rated output		
Inputs	One Input Port: Port accepts any input module except T-01 One Direct Input (Use of direct input prohibits use of modular input port.)		
Input Sensitivity /Impedance	Input Port: 100 mV or 1000 mV (switchable)/10 kΩ Direct Input: 100 mV or 1000 mV (switchable)/10 kΩ		
Outputs	Main (T): 8 Ω, 25 and 70 volts, balanced Main (D): 4 Ω, unbalanced		
Output Regulation (1kHz)	(D) Less than 0.5 dB, no load to full load (T) Less than 1.0 dB, no load to full load		
S/N Ratio (Band Pass 20 - 20,000 Hz)	Input level switch in 0 dBV (1000 mV) position: 108 dB Input level switch in -20 dBV (100 mV) position: 90 dB		
Controls	1 Input gain control, 1 Input level switch, 1 Power ON/OFF switch, 1 Low-Cut switch		
Indicators	1 Power LED, 1 Protect LED, 1 Signal LED, 1 Normal LED, 1 Peak LED		
Protection	Self-protection, with AC fuse (inside)		Self-protection with 2 AC fuses (inside), plus 2 DC fuses
Connectors	Input: Card-edge connector and screw-terminal strip Output: Screw-terminal strip AC outlet: 3-pin grounding type AC power cord/plug: SJT, 3-prong type		
Temperature Range	-10 ºC - +60 ºC (12 ºF to 140ºF)		
Finish	Black		
Dimensions (W×H×D)	16.54" (W) x 3.9" (H) x 14.09" (D) 420 (W) × 99.1 (H) × 358 (D) mm		16.54" (W) x 6" (H) x 13.16" (D) 420 (W) × 151.3 (H) × 334.2 (D) mm
Weight	9.1 kg (20.06 lbs)	10.9 kg(24.03 lbs)	19.5 kg (43 lbs)
Accessory	Volume control cover: YA-920 x 1		
Option	Rack mounting bracket: MB-25B		Rack mounting bracket: MB-35B

(T)=Transformer (D)=Direct

Optional Accessory

Rack Mount Kit
MB-25B

Rack Mount Kit for P-924MK2
MB-35B

Volume Control Cover *(included)*
YA-920

Accessory Reference on page 103; Amplifier Selection Chart on page 111

Please see 900 Series Modules on page 42.

900 Series Amplifiers

TOA's M-900MK2 Mixer Preamplifier controls and mixes up to eight independent input signals and delivers up to +20 dBm of output power. Optional plug-in modules are available for use with the mixer preamplifier to provide versatility for a wide range of operating applications.

8-Channel Mixer Preamplifier (UL version)

M-900MK2

- Eight module slots accept any combination of TOA plug-in modules for custom system configurations
- Balanced, transformer-isolated output with selectable impedance, screw terminal connector and protective cover plate
- Dual mute bus permits multiple levels of paging priority using optional mute-type modules
- External mute terminals for activating mute function with external switch-closure
- Remote master volume terminals for control with an external 10k ohm linear-taper potentiometer
- Individual channel and master volume controls
- Auxiliary output for connecting an external mixer or recording device
- Bridging input/output for input expansion or recording device
- Normal, clip, power, protect, and signal indicators provide unit status
- Optional rack-mount kit, model MB-25B (2 RU)
- Optional 900 Series Modules required

Model	M-900MK2
Power Requirement	AC Mains, 120V, 60 Hz
Rated Output	+4 dBm, +20 dBm (max)
Frequency Response	20 Hz – 20 kHz, ±1dB
Input	Eight input ports: each port accepts any input module. One bridging input/output
Output	Main: Balanced, 150/600 Ω; AUX: Unbalanced, 10 kΩ, 0 dBm
Indicators	1 Power LED, 1 Protect LED, 1 Signal LED, 1 Normal LED, 1 Peak LED
S/N Ratio	Master Volume Min.: 90 dB (Band Pass 20 - 20, 000 Hz); Master Volume Max.: 77 dB (Band Pass 20 - 20, 000 Hz);
Tone Control	Bass: ±10dB at 100Hz; Treble: ±10dB at 10kHz
Controls	8 Input gain controls; 1 Master gain control; 1 Bass control; 1 Treble control; 1 Power ON/OFF switch; 1 Tone defeat switch
Dimensions	420 (W) × 99.1 (H) × 307.5 (D) mm (16.54" x 3.90" x 12.11")
Weight	5.3 kg (11.68 lbs)
Accessories	Volume control cover: YA-920 x 4
Optional Accessory	Rack mounting bracket: MB-25B

Optional Accessories - M-900MK2

Rack Mount Kit

MB-25B

Volume Control Cover *(included)*

YA-920

In-Wall Amplifier (UL version)

W-906A** 60W

W-912A** 120W

- Modular design allows fast and easy custom configurations
- Engineered for high performance with wide frequency response, very low noise and distortion, and excellent output regulation
- Six module slots accept TOA plug-in modules for unmatched flexibility, expandable to eight slots with optional kit, model WE-2
- Flush or surface-mount with optional back boxes - BX-9F (flush-mount) and BX-9S (surface-mount)
- One octave nine band graphic equalizer
- High and low pass filters
- Compressor prevents overload and distortion

Model	W-906A**	W-912A**
Type	In-Wall Mounting 6 channel Mixer Power Amplifier	
Output Power	60 W RMS	120 W RMS
Inputs	6 input ports; 100 mV / 10 k Ohms. Each port accepts any input module except T-01S. (Use T-01S in port #5 or #6 only.) 1 Bridging input/output; 100 mV / 3.3 k Ohms	
Outputs	Transformer Output: 8 ohms, 25 V & 70 V, balanced; Direct Output: 4 ohms, unbalanced	
Equalization	9-band One-octave Graphic Equalizer; Center Frequencies; ISO 63, 125, 250, 500, 1k, 2k, 4k, 8k, 16 kHz; Equalization Range: ±12 dB	
Power Requirement	120V AC, 60 Hz	
Power Consumption	100 W	180 W
Accessory	3 volume control covers	
Optional Accessories	Flush Back-box: BX-9F; Surface Back-box: BX-9S; Expander Kit: 2 Input WE-2	

** Special order product.

Optional Accessories - In-Wall Mixer/Amplifiers

Flush Back-box

BX-9F

Surface Back-box

BX-9S

2 Input Expander Kit

WE-2

Accessory Reference on page 103; Amplifier Selection Chart on page 111

Please see 900 Series Modules on page 42.

900 Series Amplifiers

900 Series Modules - Microphone Input Modules

Microphone Input Modules

M-01 Series

(M-01F/M/P/S T)

- For balanced, low impedance microphone
- High and low cut filters for tone control
- Phantom power for condenser-type microphones
- Connectors: female XLR *(M-01F)*, male XLR *(M-01M)*, 1/4" phone jack *(M-01P)*, removable terminal block *(M-01S)*

Microphone Input with Mute-Receive

M-11S T

- For balanced, low impedance microphone
- High and low cut filters for tone control
- Phantom power for condenser-type microphones
- Responds to mute bus activation via mute send module or switch-closure
- Two mute response modes: Normally-on (OFF during mute activation) or Normally-off (ON during mute activation)
- Connector: removable terminal block

Microphone Preamplifier with Remote Volume Control

M-21S

- For balanced, low impedance microphone
- High and low cut filters for tone control
- Phantom power for condenser-type microphones
- Allows remote control of input signal using an external 10k ohm linear-taper potentiometer
- Connector: screw terminal

Microphone Paging Input with Mute-Send

M-41S

- For balanced, low impedance microphones
- For voice-activated over-ride of mute-receive modules
- High and low cut filters for tone control
- Phantom power for condenser-type microphones
- Signal at input terminals activates mute bus
- Connector: removable terminal block

Microphone Input with Voice Gate

M-51 Series

(M-51F/S T)

- For balanced, low impedance microphones
- Low cut filter for tone control
- Phantom power for condenser-type microphones
- Gate function keeps module muted until input signal exceeds threshold
- Connectors: female XLR *(M-51F)*, removable terminal block *(M-51S)*

Microphone Input with Compressor

M-61 Series

(M-61F/S T)

- For balanced, low impedance microphones
- High and low cut filters for tone control
- Phantom power for condenser-type microphones
- Compressor function prevents overload and distortion
- Connectors: female XLR *(M-61F)* or removable terminal block *(M-61S)*

High Impedance Microphone Input

M-03P

- For unbalanced, high impedance mics
- High and low cut filters for tone control
- Connector: 1/4" phone jack

Mic/Line Input w/Mute/Send Receive

ML-11

- Switchable mic/line input
- Adjustable Mute-Send threshold (VOX sensitivity)
- High and Low Cut Filters
- Combination Mute Send and Receive function
- Assign mute send or receive to each mute bus

900 Series Modules - Input Modules

SIP Module

SP-11N

- VOIP phone paging module supported by SIP (Session Initiation Protocol)
- Auto-answer function
- Can be connected to IP network and directly registered as one SIP phone station on various SIP server management software
- VOX and mute functions
- Designed for use with TOA's 9000M2, 900, 700, and BG-2000 series amplifiers

Noise Masking Module

NM-01

- Generates a noise source to be used for sound masking and audio privacy applications
- Applications include; open-plan office environments or smaller spaces where distracting or private conversations need to be made unintelligible
- Allows connection of optional external signal processing equipment (i.e. an equalizer) as required
- Simple contact allows for muting of this noise source
- Designed for use with TOA's 9000M2, 900, 700, and BG-2000 series amplifiers

900 Series Amplifiers

900 Series Modules - Line Input Modules

Balanced Line Input

B-01 Series

(B-01F/S T)

- For balanced or unbalanced line level sources such as mixer outputs, signal processors and wireless microphone receivers
- Transformer isolation (10kΩ)
- Connector: female XLR (B-01F), removable terminal block (B-01S)

Balanced Line Input with Mute-Receive

B-11S

- For balanced or unbalanced line level sources such as mixer outputs, signal processors and wireless microphone receivers
- Transformer isolation (10kΩ)
- Responds to mute bus activation via mute send module or switch-closure
- Connector: removable terminal block

Balanced Line Input with Remote Volume Control

B-21S

- For balanced or unbalanced, line level equipment such as tuners, tape decks and CD players
- Transformer isolation (10kΩ)
- Allows remote control of input signal using an external 10k ohm linear-taper potentiometer
- Connector: screw terminal

Balanced Line with Input with Mute-Send

B-41S

- For balanced or unbalanced, line level equipment
- For signal-active over-ride of mute-receive modules
- Transformer isolation (10kΩ)
- Signal at input terminals activates mute bus
- Connector: removable terminal block
- Recommended for phone paging applications

Line Matching Input

L-01 Series

(L-01F/S T)

- For applications requiring 600Ω line-matching
- Transformer isolation (600Ω)
- Connector: female XLR (L-01F); removable terminal block (L-01S)

Line Matching Input with Mute-Receive

L-11S

- For applications requiring 600Ω line-matching
- Responds to mute bus activation
- Transformer isolation (600Ω)
- Responds to mute bus activation via mute send module or switch-closure
- Connector: removable terminal block

Line Matching Input with Mute-Send

L-41S

- For applications requiring 600 Ω line-matching
- For signal-active over-ride of mute-receive modules
- Transformer isolation (600Ω)
- Signal at input terminals activates mute bus
- Connector: removable terminal block

Unbalanced Line Input

U-01 Series

(U-01F/P/R/S T)

- For unbalanced, line level sources such as tuners, cassette decks, CD players, computer sound cards, jukeboxes, mixers and satellite receivers
- Use for adjacent sources (less than 15ft from the host unit)
- Connectors: female XLR (U-01F), 1/4” phone jack (U-01P), RCA jack (U-01R), removable terminal block (U-01S)

Unbalanced Line Input with High/Low Cut Filters

U-03 Series

(U-03R/S)

- For unbalanced, line level sources such as tuners, cassette decks, CD players, computer sound cards, jukeboxes, mixers and satellite receivers
- Use for adjacent sources (less than 15ft from the host unit)
- High and low cut filters for tone control
- Connectors: dual RCA jack w/ passive summing (U-03R), removable terminal block (U-03S)

Unbalanced Line Input with Mute-Receive

U-11 Series

(U-11R/S T)

- For unbalanced, line level sources such as tuners, cassette decks, CD players, computer sound cards, jukeboxes, mixers and satellite receivers
- Use for adjacent sources (less than 15ft from the host unit)
- Responds to mute bus activation via mute send module or switch-closure
- Connectors: RCA jack (U-11R), removable terminal block (U-11S)

900 Series Amplifiers

900 Series Modules - Line Input Modules

Unbalanced Line Input with Variable Mute-Receive Depth

U-12S

- For unbalanced, line level sources such as tuners, cassette decks, CD players, computer sound cards, jukeboxes, mixers and satellite receivers
- Use for adjacent sources (less than 15ft from the host unit)
- Responds to mute bus activation via mute send module or switch-closure
- Adjustable depth provides “ducking” rather than full muting
- Connector: removable terminal block

Unbalanced Line Input with High/Low Cut Filters and Mute-Receive

U-13 Series
(U-13R/S)

- For unbalanced, line level sources such as tuners, cassette decks, CD players, computer sound cards, jukeboxes, mixers and satellite receivers
- Use for adjacent sources (less than 15ft from the host unit)
- High and low cut filters for tone control
- Responds to mute bus activation via mute send module or switch-closure
- Connectors: dual RCA jack w/passive summing (U-13R), removable terminal block (U-13S)

Dual Input Priority Module w/AGC

U-14R

- Dual input module for applications with business music plus an on-premises CD jukebox or other source
- Two line inputs – Jukebox and BGM
- Auto-mute function with adjustable mute threshold (jukebox overrides BGM)
- Automatic Gain Control (AGC) on jukebox input for consistent signal levels
- Individual input level controls
- Stereo-summing dual RCA jacks

Unbalanced Line Input with Remote Volume Control

U-21S

- For unbalanced, line level sources such as tuners, cassette decks, CD players, computer sound cards, jukeboxes, mixers and satellite receivers
- Use for adjacent sources (less than 15ft from the host unit)
- Allows remote control of input signal using an external 10kΩ linear-taper potentiometer
- Master Remote Volume mode
- Connector: screw terminal

Unbalanced Line Input with High/Low Filters and Mute-Send

U-43 Series
(U-43R/S)

- For unbalanced, line level sources such as tuners, cassette decks, CD players, computer sound cards, jukeboxes, mixers and satellite receivers
- Use for adjacent sources (less than 15ft from the host unit)
- High and low cut filters for tone control
- Signal at input terminals activates mute bus
- Connectors: dual RCA jack w/ passive summing (U-43R), removable terminal block (U-43S)

Unbalanced Line Input with Compressor

U-61S T

- For unbalanced, line level sources such as tuners, cassette decks, CD players, computer sound cards, jukeboxes, mixers and satellite receivers
- For adjacent sources (less than 15ft from the host unit)
- Compressor function prevents overload and distortion
- Master compressor mode
- Connector: removable terminal block

900 Series Modules - Special Function Modules

Equalization for TOA Speakers

E-03R
(F-122C)

- Optimized preset equalization for F-122C speakers
- Connects between pre-amp output and power amp input

Equalization for TOA Speakers

E-04R *(H-1)*,
E-05R *(H-2/H-2WP)*,
E-07S *(FB-120 and HB-1)*

- Optimized preset equalization curve for TOA speakers
- Connects between pre-amp output and power amp input (except E-07S)
- Dual RCA cable included

E-07S

- Connector: dual RCA (in/out); removable terminal block
- Low pass output filter for powered subwoofer
- Subwoofer output is balanced or unbalanced
- Subwoofer phase can be changed

** The E-07S is a low-pass-filter output module with a mix bus output to drive a dedicated external subwoofer amplifier*

900 Series Amplifiers

900 Series Modules - Special Function Modules

1 kHz Sine Wave Test Tone

S-01S T

- Generates 1 kHz sine wave tone via switch-closure. Ideal as a test tone for the audio system
- Connector: removable terminal block

Buzzer/Yelp Tone Generator

S-02S T

- Generates buzzer or yelp tones via switch-closure
- Connector: removable terminal block

Switch-Selectable Tone Generator

S-04S T

- Generates one of four tones via switch-closure
- Single or continuous tone activation
- Connector: removable terminal block

Balanced Line Output

T-01S T

- Transformer-Isolated line output of the mixing bus signal to feed other remote mixers, amplifiers, and tape recorders
- Output level control
- Connector: removable terminal block

Unbalanced Line Input with Music-On-Hold Output and Input Mute-Receive

T-12S

- Unbalanced line input for AM/FM tuners, cassette decks, CD players, computer sound cards, jukeboxes, mixers and satellite receivers
- Balanced transformer-isolated uninterrupted output of module's input signal
- Output level control for adjusting the MOH output signal level
- Responds to mute bus activation via mute send module or switch-closure
- Connector: screw terminal

Unbalanced Line Input with Music-On-Hold Output

T-02S

- Unbalanced line input for AM/FM tuners, cassette decks, CD players, computer sound cards, jukeboxes, mixers and satellite receivers
- Balanced transformer-isolated uninterrupted output of module's input signal
- Output level control for adjusting the MOH output signal level
- Connector: screw terminal

Remote Master Volume Control (VCA) Module

V-01S

- Voltage Controlled Amplifier (VCA) for applications requiring preset remote master volume control
- Line input and output connect to host amplifier's pre-amp output and power amp input
- 24 VDC output and control input interfaces directly to RDL RLC3 remote level control
- RCA and phoenix-style connectors
- For 10k potentiometer volume control, use U-21S

Equalization for TOA Speakers

E-06RB**

(H-3/H-3WP)

- Optimized preset equalization for H-3/H-3WP speakers
- Connects between pre-amp output and power amp input

Two Input Expander Kit

WE-2

- Two input expander kit (W-906A, W-912A) (Requires 900 series modules)

** Special Order Product

A-700 Series Mixer Power Amplifiers

Equipped with 6 LINE/MIC selectable inputs, 2 LINE inputs and 2 MODULE inputs, the A-700 Series PA Amplifier is designed to suit PA system applications such as announcements, BGM and broadcasting, in venues such as; churches, large rooms and factories.

A-700 Series Mixer Power Amplifiers

A-706 60W
A-712 120W
A-724 240W

- Nine channel integrated mixer/amplifiers for paging and background/foreground music distribution
- Proven TOA quality and reliability with wide frequency response, very low noise and distortion, and excellent output regulation
- Six Mic/Line inputs, balanced, with mic trim, 23 VDC phantom power and removable terminal block connector
- Two Auxiliary inputs, unbalanced, with dual-RCA jacks for convenient connection of stereo sources
- Module slot accepts 900 Series plug-in modules with additional features
- Transformer-isolation for telephone paging applications (Input #1) (optional on additional channels)
- 25 V, 70.7 V and 4 ohm speaker outputs with removable terminal block connector
- Auto-mute priority function assignable via external switches:
  Channels 1-3 and Module configurable as Mute Send;
  Channels 1-8 and Module configurable as Mute Receive
- Auto-mute sense control for adjusting mute activation threshold
- External mute terminals for activating mute function with external switch-closure
- Remote AC turn-on for activating power with an external switch-closure
- Turn-On delay disconnects output during power-up
- Over-current and thermal protection circuitry prevents potential damage from overloads, short-circuit and overheating
- Optional rack-mount kit, model MB-25B (2 RU)
- UL/cUL Listed

Model	A-706	A-712	A-724
Power Source	120 V AC, 60 Hz		
Rated Output	60 W	120 W	240 W
Power/Current Consumption	155 W (rated output), 68 W (based on UL60065), under 250 mA (when power switch is OFF)	285 W (rated output), 110 W (based on UL60065), under 400 mA (when power switch is OFF)	565 W (rated output), 215 W (based on UL60065), under 60 mA (when power switch is OFF)
Frequency Response	50 - 20,000 Hz (±3 dB)		
Distortion	Under 2% at 1 kHz, rated power		
Input	INPUT 1 - 6: -70 to -50 dB*, 600 Ω (MIC)/ -10 dB*, 600 Ω (LINE) INPUT 1: Transformer-balanced, removable terminal block (3 pins) INPUT 2 - 6: Electronically-balanced, removable terminal block (3 pins) INPUT 7 - 8 (LINE): -20 dB*, 10 kΩ, unbalanced, RCA jack MODULE: -20 dB*, 10 kΩ PWR AMP IN: 0 dB*, 10 kΩ, unbalanced, RCA jack (An equalizer or other signal processor connectable between PRE AMP OUT and PWR AMP IN terminals)		
Output	REC OUT: 0 dB*, 600 Ω, unbalanced, RCA jack PRE AMP OUT: 0 dB*, 600 Ω, unbalanced, RCA jack SPEAKER OUT: 70 V line (83 Ω), 25 V line (10 Ω), and 4 - 16 Ω, removable terminal block (4 pins)		
Phantom Power (+23 V DC)	ON or OFF for each INPUT 1 - 6 (MIC input) with switch setting		
S/N Ratio (Band pass: 20 - 20,000 Hz)	Over 55 dB (INPUT 1 - 6, mic trim volume: max., 600 Ω terminated) Over 70 dB (INPUT 1 - 6, mic trim volume: min., 600 Ω terminated) Over 76 dB (Master volume: max.) Over 90 dB (All input volume: min.)		
Tone Control	Bass: ±10 dB at 100 Hz; Treble: ±10 dB at 10 kHz		
Control Input	REMOTE VOLUME: Removable terminal block POWER REMOTE: No-voltage make contact input, open voltage: under 14 V DC, short-circuit: under 0.5 mA, removable terminal block MUTE CONTROL: No-voltage make contact input, open voltage: under 17 V DC, short-circuit: under 1.5 mA, removable terminal block		
Indicator	5-point LED output level meter, Power indicator LED		
Operating Temperature	-10 ºC to +40 ºC (14 ºF to 104 ºF)		
Finish	Panel: ABS resin, black, hair line; Case: Steel plate, black		
Dimensions	420 (W) × 107.7 (H) × 351.5 (D) mm (16.53" x 4.24" x 13.84")		
Weight	9.5 kg (21 lbs)	12 kg (26 lbs)	13.5 kg (30 lbs)
Accessory	AC power cord 2m (6.6ft) x 1, Removable terminal plug (3 pins) x 6, Removable terminal plug (4 pins) x 1, Removable terminal plug (6 pins) x 1, Volume control cover x 4		
Option	Rack mounting bracket: MB-25B, Input transformer: IT-450**, Volume control cover: YA-920		

* 0 dB = 1 V

Optional Accessory

Rack Mount Kit
MB-25B

Input Transformer
IT-450**

Volume Control Cover *(included)*
YA-920

Accessory Reference on page 103; Amplifier Selection Chart on page 111

Please see 900 Series Modules on page 42.

** Special Order Product

BG-2000 Series Mixer Power Amplifiers

TOA's BG-2000 Series Mixer Power Amplifier is a 5-input mixer amplifier for background music and general announcements. It is suited for use in bars, retail stores, and banquet halls. It is equipped with MOH OUT that permits 2-channel broadcast when used in conjunction with the optional booster amplifier BA-235 (35W) or BA-260 (60 W).

BG-2000 Series Mixer/Amplifiers

BG-2035 35W
BG-2060 60W
BG-2120 120W

- Compact five channel Mixer-Amplifier for paging, background/foreground music distribution and music/messaging-on-hold.
- All inputs/outputs with removable terminal blocks allow quick and easy installation.
- Any of five inputs assignable to MOH/ZONE 2 output.
- RCA pin jacks for Lines 2 and 3.
- Line 2 and 3 inputs equipped with summing RCA jacks.
- Phantom Power (+ 24V DC) incorporated for MIC input.
- Module slot accepts optional 900 Series plug-in modules for custom system configurations.
- Rear panel-mounted DIP switches allow easy configuring of settings.
- Provides auto/manual mute function with adjustable muting sensitivity.
- Incorporates Remote volume control connection.
- 2-channel broadcast capability together with zone 2 expansion capability in conjunction with BA-200 Series.
- Tamper-proof, front-panel bass and treble controls are recessed to protect their settings.
- Thermal protection circuitry prevents potential damage from excessive heat build-up.
- AC Mains Circuit Breaker.
- Supplied accessory security knobs for volume controls prevent unauthorized volume setting changes.
- Optional rack-mount kit (MB-1000).
- Optional 900 Series Modules required
- UL/cUL Listed.

Model	BG-2035	BG-2060	BG-2120
Power Req.	120V AC, 60 Hz		
Rated Output	35W	60W	120W
Power Consumption	94 W (rated output), 50 W (based on cULus standards)	163 W (rated output), 80 W (based on cULus standards)	265 W (rated output), 120 W (based on cULus standards)
Input	MIC: -60 dB*, 600Ω, electronically balanced, removable terminal block Line 1: -10 dB*/TEL: -20 dB* Line 1/TEL selectable, 10 kΩ, electronically balanced, removable terminal block Line 2, 3: -10 dB*, 10 kΩ, unbalanced, removable terminal block and RCA jacks Module		
Output	Speaker: 4 Ω, 25 V (18 Ω), 70 V (140 Ω), balanced, removable terminal block MOH: 0dB*, 600Ω, balanced, removable terminal block Line: 0 dB*, 600 Ω, unbalanced, removeable terminal block	Speaker: 4 Ω, 25 V (10 Ω), 70 V (83 Ω), balanced, removable terminal block MOH: 0dB*, 600Ω, balanced, removable terminal block Line: 0 dB*, 600 Ω, unbalanced, removeable terminal block	Speaker: 4 Ω, 25 V (5.2 Ω), 70 V (42 Ω), balanced, removable terminal block MOH: 0dB*, 600Ω, balanced, removable terminal block Line: 0 dB*, 600 Ω, unbalanced, removeable terminal block
Phantom Power	On/Off switch for Mic, +24 V DC		
S/N ratio	Mic: 60 dB or more, Line 1/TEL, Line 2, 3, Module: 75 dB or more (Band Pass: 20 Hz - 20 kHz, Tone controls: Centered)		
Tone Control	Bass: ±10dB at 100Hz; Treble: ±10dB at 10kHz		
Muting	Manual mute/Automatic mute		
Dimensions	264 (W) × 94.3 (H) × 276.3 (D) mm (10.39" x 3.71" x 10.52")		
Weight	5.3 kg (11.68 lbs)		6 kg (13.23 lbs)
Accessory	Volume control cover: YA-920 x 5; Removable terminal plug (2 pins) x 4, Removable terminal plug (3 pins) x 2, Removable terminal plug (4 pins) x 1, Removable terminal plug (5 pins) x 1		
Optional	Rack mounting bracket: MB-1000		

*0 dB = 1 V

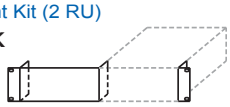
Optional Accessories BG-2000 Series

Rack Mount Kit (2 RU)
MB-1000

Volume Control Cover *(included)*
YA-920

Optional Accessories BG-200 and BA-200 Series

Rack Mount Kit (2 RU)
MB-25B-BK



Rack Mount Kit for 2 units
MB-25B-J

Wall Mount Bracket
WB-900B

Volume Control Cover *(included)*
YA-920

Accessory Reference on page 103; Amplifier Selection Chart on page 111

Please see 900 Series Modules on page 42.

BG-200 Series PA Amplifiers

TOA's BG-200 Series is a 20/35 W 3-input mixer amplifier for background music and general announcements. It is suited for use in bars, retail stores, and banquet halls. It is equipped with MOH OUT that permits 2-channel broadcast when used in conjunction with the optional booster amplifier BA-235 (35W) or BA-260 (60 W).

Mixer Amplifier

BG-220 20W
BG-235 35W

- Ideal for background music and paging applications
- 2-channel broadcasts possible for system expansion as required through MOH/ZONE 2 output on BG Series Amplifiers
- Tamper-proof bass and treble controls preserve system settings
- Security knobs for volume control included
- Any of 3 inputs can be assigned to MOH/ZONE 2 output
- Line 2 and 3 outputs equipped with RCA pin jacks
- Line 2 and 3 inputs equipped with summing RCA jacks
- Automatic Mute sensing control to set mute activation threshold and manual mute function also provided
- Removable terminal blocks and rear-mounted DIP switches for fast and easy installation/setup
- Thermal protection circuits against overheating
- Meets UL/cUL regulations
- Optional rack and wall-mount kits: MB-25B-BK (2 RU) and MB-25B-J (two units, 2 RU)

Model	BG-220	BG-235
Power Req.	120V AC, 60 Hz	
Rated Output	20 W	35 W
Power Consumption	60 W (rated output), 36 W based on cULus standards)	90 W (rated output), 55 W based on cULus standards)
Input	MIC: -60 dB*/Line 1: -10 dB* MIC/Line 1 selectable, 600 Ω, electronically balanced, removable terminal block Line 2,3: -10 dB*, 10 kΩ, unbalanced, removable terminal block or RCA jack	
Output	Speaker: 4 Ω, 25 V (31 Ω) and 70 V (245 Ω), balanced removable terminal block MOH: 0 dB*, 600 Ω, balanced, removable terminal block; Line: 0 dB*, 600 Ω, unbalanced, removable terminal block	Speaker: 4 Ω, 25 V (18 Ω) and 70 V (140 Ω), balanced removable terminal block MOH: 0 dB*, 600 Ω, balanced, removable terminal block; Line: 0 dB*, 600 Ω, unbalanced, removable terminal block
S/N ratio	Mic/Line 1: 60 dB or more, Line 2, 3: 80 dB or more (Band Pass: 20 Hz - 20 kHz, Tone Controls: Centered)	
Tone Control	Bass: ±10dB at 100Hz; Treble: ±10dB at 10kHz	
Control	Mic/Line 1 gain control, Line 2 gain control, Line 3 gain control, Bass tone control, Treble tone control, MOH out gain control, Mute control (Manual mute), Mute sense control, Auto mute switch (Mic/Line 1), Mic/Line 1 selector switch, Mute receive switch (Line 2,3), MOH assign switch (Mic/Line 1, Line 2,3), Power ON/OFF switch	
Dimensions	210 (W) × 94.3 (H) × 265 (D) mm (8.27" x 3.71" x 10.43")	
Weight	3.5 kg (7.72 lbs)	4 kg (8.82 lbs)
Accessory	Volume Control Cover: YA-920 x 3, Removable terminal plug (2 pins) x 3, Removable terminal plug (3 pins) x 1, Removable terminal plug (4 pins) x 1, Removable terminal plug (5 pins) x 1	
Option	Rack mounting bracket: MB-25B, MB-25B-J, WB-900B	

*0 dB = 1 V

BA 200 Series PA Amplifiers

TOA's BA-200 Series is a 35/60 W power amplifier for background music and general announcement. It is suited for use in bars, retail stores, and banquet halls. 2-channel broadcast can be made when used in conjunction with the optional mixer amplifier BG-220 (20W) or BG-235 (35 W).

Power Amplifier

BA-235 35W
BA-260 60W

- Ideal for background music and paging applications
- 2-channel broadcast possible for system expansion as required through MOH/ZONE 2 output on BG Series Amplifiers
- Tamper-proof bass and treble controls preserve system settings
- Security knobs for volume control included
- Remote master volume control possible by using an external volume control
- RCA line input jacks
- Thermal protection circuits against overheating
- Meets UL/cUL regulations
- Optional rack kits: MB-25B-BK (2 RU) and MB-25B-J (two units, 2 RU)

Model	BA-235	BA-260
Power Req.	120V AC, 60 Hz	
Rated Output	35 W	60 W
Power Consumption	90 W (rated output), 52 W based on cULus standards)	130 W (rated output), 66 W based on cULus standards)
Input	Line In: 0 dB*/+4 dB* (selectable), 10 kΩ, unbalanced, removable terminal block or RCA jack	
Output	Speaker: 4 Ω, 25 V (18 Ω) and 70 V (140 Ω), balanced removable terminal block Bridge: Parallel in Line in, removable terminal block	Speaker: 4 Ω, 25 V (10 Ω) and 70 V (83 Ω), balanced removable terminal block Bridge: Parallel in Line in, removable terminal block
S/N ratio	80 dB or more (Band Pass: 20 Hz - 20 kHz, Tone Controls: Centered)	
Tone Control	Bass: ±10dB at 100Hz; Treble: ±10dB at 10kHz	
Control	Master gain control, Bass tone control, Treble tone control, Input Level selector switch, Remote Volume control, Power ON/OFF switch	
Dimensions	210 (W) × 94.3 (H) × 265 (D) mm (8.27" x 3.71" x 10.43")	
Weight	4 kg (8.82 lbs)	4.6 kg (10.14 lbs)
Accessory	Volume Control Cover: YA-920 x 1, Removable terminal plug (2 pins) x 3, Removable terminal plug (4 pins) x 1	
Option	Rack mounting bracket: MB-25B-BK, MB-25B-J	

*0 dB = 1 V

Digital Power Amplifiers

TOA's DA Series multi-channel power amplifiers offer a wider choice of power ratings, advanced digital Class D amplifications circuitry, and a highly efficient AC mains to output power ratio, for the complete technological superiority it takes to support long-term installation applications. These energy-efficient, space-saving amplifiers are designed to combine high levels of performance and efficiency, and are well-suited to ensure sound reinforcement reliability in a wide range of venue types. The low-impedance models are ideal for multi-zone applications such as presentation and press-conference rooms, restaurants and similar-sized locations. The high-impedance units are well-suited to such locations as exhibition halls, sports facilities, multipurpose halls and houses of worship.

Dual-Channel Power Amplifier

DA-250D
DA-250DH

4-Channel Power Amplifier

DA-250F
DA-250FH

4-Channel Power Amplifier

DA-550F
DA-500F-HL

DA-500FH

• DA-250D
- 2x 250W (8 Ω)
- 2x 170W (8 Ω)

• DA-250DH
- 2x 250W (70V)
- 1x 500W bridged (140V)
- High pass filter

• DA-250F
- 4x 250W (4 Ω)
- 4x 170W (8 Ω)
- 2x 500W bridged (8 Ω)
- Limiter

• DA-250FH
- 4x 250W (70V)
- 2x 500W bridged (140V)
- Limiter and High pass filter

• DA-500F-HL
- 4x 500W (70V)
- 4x 550W (8 Ω)
- 4x 100W (4 Ω)
- 2x 1000W bridged (140V)
- 2x 1000W (16 Ω)

• DA-500F
- 4x 550W (4 Ω)
- 4x 350W (8 Ω)
- 2x 1000W (8 Ω)

• High reliability
The DA amplifier has a comprehensive protection circuitry for protection against excessive current flow due to overload, short circuit, unusual DC voltage output, and power amplifier heat sink temperature rise (over 100°C), temperature rise inside the unit (over 80°C).

• Amplifier with lightweight design
Installation has become much easier thanks to the light-weight design.

• High efficiency
Extremely high amplification efficiency of 80-90%, resulting in reduction in power consumption by more than 60% compared with Class-AB amplifiers.

• Highly durable
Stands up to extended hours of operation. The DA amplifier has undergone a large number of rigorous tests to prove its durability. In addition,TOA has been conducting a "non-stop driving test" of the DA Series.

• Compact design
The DA-250 Series is 1-unit size, and they can be efficiently mounted on a rack, so they require only a small installation space. Because the amplifiers do not generate much heat, 5 units can be stacked together in a rack.

• Independent power supply
Each of the channels has its own power supply. If the power supply of Channel 1 should fail, this won't affect the operation of Channel 2. It is also possible to use the either channel as a spare amplifier.

Model	DA-250D	DA-250DH	DA-250F	DA-250FH	DA-550F	DA-500F-HL
Power Source	120 V AC, 50/60 Hz					
Number of Channels	2		4			
Power Consumption*						
Rated power consumption						
1 kHz 8 ohms	420 W	—	850 W	—	1650 W	2600 W
4 ohms	650 W	—	1300 W	—	2800 W	580 W
70 Volts	—	580 W	—	1200 W	—	2350 W
S/N Ratio (A weighted)	100 dB					
Crosstalk at 10 kHz (A weighted)	70 dB					
Inputs Input impedance / Input sensitivity	10 kΩ (balanced) +4 dB (1.23V)					
Rated Output	2 channels: 250 W x 2 (4 Ω), 170 W x 2 (8 Ω) 1 channel (BRIDGE): 500 W (8 Ω)	2 channels: 250 W x 2 (70 V line, 19.6 Ω) 1 channel (BRIDGE): 500 W (140 V line, 39.2 Ω)	4 channels: 250 W x 4 (4 Ω), 170 W x 4 (8 Ω) 2 channels (BRIDGE): 500 W x 2 (8 Ω)	4 channels: 250 W x 4 (70 V line, 19.6 Ω) 2 channels (BRIDGE): 500 W x 2 (140 V line, 39.2 Ω)	4 channels: 550 W x 4 (4 Ω), 350 W x 4 (8 Ω) 2 channels (BRIDGE): 1,100 W x 2 (8 Ω)	4 channels: 500 W x 4 (70 V line, 9.8 Ω), 550 W x 4 (8 Ω), 100 W x 4 (4 Ω) 2 channels (BRIDGE): 1,000 W x 2 (140 V line, 19.6 Ω), 1,100 W x 2 (16 Ω)
	M4 screw terminal, distance between barriers: 8.8 mm (0.35")					
Protection Circuit	Protection against excessive current flow due to overload, short circuit, unusual DC voltage output, temperature rise at power amp heat sink (100 °C or more (212 °F)), temperature rise inside the unit (80 °C or more (176 °F))					
Dimensions	482 (W) × 44 (H) × 401.8 (D) mm (18.98" x 1.73" x 15.82")				482 (W) × 88.4 (H) × 404.2 (D) mm (19"x 3.5"x15.9")	
Weight	5 kg (11.02 lbs)		6.6 kg (14.5 lbs)		8.8 kg (19.4 lbs)	

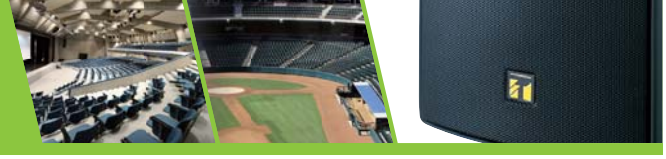
*0 dB = 0.775 V

Optional Accessories

Matching Transformer
MT-251H

Accessory Reference on page 103; Amplifier Selection Chart on page 111

Speakers



Ceiling Speakers

Flush Mount Type Ceiling Speaker

PC-1869 **PC-1869S**

- Speaker design that harmonizes with the venue's architecture and decor
- Quick and easy installation thanks to new SUS spring clamp installation method
- Wide frequency response
- 5" ceiling speaker diameter
- Thin panel does not clash with interior design
- Back box BB-1864 for use with PC-1869S

Model	PC-1869	PC-1869S
Rated Input (100V line)	6W	
Rated Impedance	100V line: 1.7kΩ (6W), 3.3kΩ (3W), 6.7kΩ (1.5W), 13kΩ (0.8 W); 70V line: 1.7kΩ (3W), 3.3kΩ (1.5W), 6.7kΩ (0.8W), 13kΩ (0.4W)	
Sensitivity (1W, 1m)	90 dB (500 - 5,000 Hz, pink noise)	
Frequency Response	55 – 18,000 Hz (peak -20 dB)	
Mounting Hole Diameter	ø150 ±3 mm (5.9" ±0.12")	
Speaker Component	12cm (5") cone-type	
Finish	Frame: Steel plate, off-white; Grille: Surface-treated steel plate net, off-white	
Dimensions	ø180 x 72(D) mm (ø7.09" x 2.9")	ø180 x 111(D) mm (ø7.09" x 4.37")
Weight	620 g (1.37 lbs)	750 g (1.65 lbs)

Flush Mount Type Ceiling Speaker

PC-648R **PC-658R**

- Spring clamp mechanism for easy speaker mounting to the ceiling
- High cost performance
- PP Resin, SECC punching net
- Back box BB-1864 for use with PC-648R

Model	PC-648R	PC-658R
Rated Input (100V line)	6W (100 V line), 3 W (70 V line)	
Rated Impedance	100V line: 1.7kΩ (6W), 3.3kΩ (3W), 10kΩ (1W) 70V line: 1.7kΩ (3W), 3.3kΩ (1.5W), 10kΩ (0.5W)	100V line: 1.7kΩ (6W), 3.3kΩ (3W), 10kΩ (1W) 70V line: 1.7kΩ (3W), 3.3kΩ (1.5W), 10kΩ (0.5W)
Sensitivity (1W, 1m)	90 dB (500 - 5,000 Hz, pink noise)	
Frequency Response	100 – 18,000 Hz (peak -20 dB)	65 – 18,000 Hz (peak -20 dB)
Mounting Hole Diameter	ø145 ±5 mm (5.71" ±0.2")	ø170 ±5 mm (6.69" ±0.2")
Speaker Component	12cm (5") cone-type	16cm (6") cone-type
Finish	Baffle: Polypropylene resin, off-white/Grille: Surface-treated steel plate net, off-white	
Dimensions	ø168 x 77(D) mm (6.61" x 3.03")	ø192 x 73(D) mm (7.56" x 2.87")
Weight	470 g (1.04 lb)	500 g (1.1 lb)

Ceiling Mount Speaker

PC-580RU
PC-580RVU

SIGNALING c UL LISTED

Square Ceiling Mount Speaker

PC-580S

- 8" in-ceiling speaker for high quality applications
- 25V & 70V transformer taps up to 5W
- Fits standard ceiling speaker template (PC-671R & others) perfect for retrofits
- Unique "monocoque" design provides better structural integrity
- PC-580RU and PC-580RVU: High-performance, cost effective ceiling speaker for use in mass notification systems, voice evacuation, emergency paging and everyday paging and background music
- PC-580RU and PC-580RVU: Meets ULC S541, UL 1480 UUMW *(Fire alarm signaling),* ULC S576 and UL 2043 (*use in air handling spaces)* when using the HY-BC580U back can
- PC-580S: High-performance, cost effective ceiling speaker for use in general paging and back ground music requirements

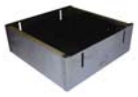
Model	PC-580RU	PC-580RVU	PC-580S
Rated Input (100V line)	10W (speaker), 5 W (transformer, 70.7 V line and 25 V line)		
Rated Impedance	70.7V line: 20K (0.25W), 10K, (0.5W), 5K (1W), 2.5K (2W), 1K (5W) Ω 25V line: 2.5K (0.25W), 1.25K (0.5W), 625 (1W), 312.5 (2W), 125 (5W) Ω		
Sensitivity (1W, 1m)	97 dB (1W, 1m)		97 dB
Frequency Response	50 - 16.5 kHz		
Speaker Component	200mm (8") dual cone type		
Finish	Baffle: Steel plate, white Grille: Surface-treated steel plate net, white		Baffle: Steel plate, white Grille: Surface-treated steel plate net, white
Dimensions	Dia. 324 x 87.3 (d) mm (12.8" x 3.4")	Dia. 324 x 87.3 (d) mm (12.8" x 3.4)	318(W) x 318(H) x 84.5(D)mm (12.5"x12.5"x3.2")
Weight	1.50 kg (3.31 lbs)	1.52 kg (3.35 lbs)	1.74 kg (3.84 lbs)
UL Standards	ULC S541, UL 1480 UUMW, ULC S576 and UL 2043 when used with HY-BC580U		--
Optional Accessories	Back can (for UL/ULC certified installation): HY-BC580U Back can (for other installations): BB-580; Tile bridge, mounting channel: Q-HY-TB2		Flush mount back box: Q-BB-580S Surface back box: Q-BB-580W

Optional Accessories - PC Series

Back Box
HY-BC580U

Back Box
BB-580

Square Flush Mount Back Box
Q-BB-580S



White Square Surface Mount Back Box
Q-BB580W

Back Box
for PC-1869S, PC-648R
BB-1864

Mounting Channel
Q-HY-TB2

Accessory Reference on page 104

Ceiling Speakers

Clean Room Ceiling Speaker

PC-5CL

- Sealed high-molecular speaker membrane to prevent floating dust particles from contaminating the environment
- Resistant against formalin
- Fits in ø98mm holes

Model	PC-5CL
Rated Input (100V line)	5W
Rated Impedance	100V line: 2 kΩ (5W) 70V line: 2 kΩ (2.5W)
Sensitivity (1W, 1m)	87 dB
Frequency Response	150 – 20k Hz
Mounting Hole Diameter	ø98 mm (3.9")
Speaker Component	8 cm cone-type
Finish	Panel: Alloy-coated ABS resin/Enclosure: ABS resin, off-white/ Punching net: Stainless steel/Exposed fixing screw: Stainless steel
Dimensions	ø116 x 110 (D) mm (4.6" x 4.3")
Weight	620 g (1.37")
Operating Temperature	-20°C to +55°C (-4 °F to 131°F)

Combination Type Reflex Horn Speakers

Wide Range Horn Speaker

CS-64 / CS-64U**

- Wide-range paging speaker for voice paging, background music and tone signaling distribution
- Exponential horn improves directivity characteristics and ensure uniform and clear sound dispersion
- Weatherproof polyurethane resin paint and impact-proof lightweight ABS resin enclosure
- Stainless steel hardware protects the speaker from corrosion

Wide Range Horn Speaker

CS-154 / CS-154U**
CS-304 / CS-304U**

- Wide-range paging speaker for voice paging, background music and tone signaling distribution
- Constant directivity horn improves directivity characteristics and ensure uniform and clear sound dispersion
- High sensitivity: up to 98 dB (1W/1m)
- IP65 certified weatherproof construction
- Weatherproof polyurethane resin paint and impact-proof lightweight ABS resin enclosure
- Stainless steel hardware protects the speaker from corrosion

SIGNALING c UL LISTED

Model	CS-64	CS-64U**	CS-154	CS-154U**	CS-304	CS-304U**
Rated Input (100V line)	6W		15W		30W	
Rated Impedance	100V line: 1.7kΩ (6W), 3.3kΩ (3W), 10kΩ (1W) 70V line: 830Ω (6W), 1.7kΩ (3W), 3.3kΩ (1.5W), 10kΩ (0.5W)		100V line: 670Ω (15W), 1kΩ (10W), 2kΩ (5W) 70V line: 330Ω (1.5W), 670Ω (7.5W), 1kΩ (5W), 2kΩ (2.5W)		100V line: 330Ω (30W), 500Ω (20W), 1kΩ (10W) 70V line: 170Ω (30W), 330Ω (15W), 500Ω (10W), 1kΩ (5W)	
Sensitivity (1W, 1m)	96 dB		97 dB		98 dB	
Frequency Response	130 Hz – 13 kHz		150 Hz – 15 kHz		120 Hz – 15 kHz	
Speaker Component	12 cm (5") cone-type (Treated for splash proof)		12 cm (5") cone-type			
Finish	Horn, cover: ABS resin, off-white, paint Bracket: Stainless steel Punched net: Surface treated steel plate, dark-gray, powder coating		Horn, cover: ABS resin, off-white, paint Bracket: Stainless steel Net: Aluminium, gray	Horn, cover: Fire-resistant ABS resin, off-white, paint Bracket: Stainless steel Net: Aluminium, gray	Horn, cover: ABS resin, off-white, paint Bracket: Stainless steel Net: Aluminium, gray	Horn, cover: Fire-resistant ABS resin, off-white, paint Bracket: Stainless steel Net: Aluminium, gray
Dimensions	233 (W) x 224 (H) x 208 (D) mm (9.2" x 8.1" x 8.2")		366 (W) x 230 (H) x 272 (D) mm (14.4" x 9.1" x 10.7")			
Weight	1.5kg (3.3 lbs)		2.8kg (6.2 lbs)		3.1kg (6.8 lbs)	
Dust/Water Protection	--		--	IP65	--	IP65
UL Code (outdoor use)	--	UL1480 UEAY	--	UL1480 UEAY	--	UL1480 UEAY

*** Special Order Product*

Combination Type Reflex Horn Speakers

Paging Horn Speaker

SC-615
SC-615T

Paging Horn Speaker

SC-630
SC-630T
SC-630TU

SC-630TU

- Both high-impedance (70V/100V lines) models and low impedance (8Ω) models available
- Stainless steel brackets and hardware (screws, bolts), and powder-coated horn ensure superb weatherproofing and corrosion-resistance
- Shock-resistant aluminum oval horn
- IP65 certified weatherproof construction
- SC-630TU is certified to UL 1480 UUMW and ULC-S541 standards

SIGNALING c UL LISTED

Model	SC-615	SC-615T	SC-630	SC-630T *(replaced by SC-630TU)*	SC-630TU
Rated Input (100V line)	15W (Mobile mount use: 15W)	15W	30W (Mobile mount use: 15W)	30W	
Rated Impedance	8Ω	70V line: 330Ω (15W), 650Ω (7.5W), 1.3kΩ (3.8W); 25V line: 42Ω (15W), 83Ω (7.5W), 330Ω(1.9W), 650Ω; (1W), 1.3kΩ (0.5W)	6Ω	70V line: 170Ω (30W) , 330Ω (15W), 650Ω (7.5); 25V line: 21Ω (30W), 42Ω (15W), 170Ω (3.7W), 330Ω; (1.9W), 650Ω (1W)	70V line: 170Ω (30W) , 330Ω (15W), 650Ω (7.5) 25V line: 21Ω (30W), 42Ω (15W), 170Ω (3.9W), 330Ω (2.1W), 650Ω (1.1W)
Sensitivity (1W, 1m)	112 dB		113 dB		
Frequency Response	280 Hz – 12.5 kHz		250 Hz – 10 kHz		
Finish	Horn flare: Aluminum, off-white, powder coating; Reflector horn and rear cover: ABS resin, off-white; Bracket screws and bolts: Stainless steel; Speaker cable: Polyvinyl chloride insulated cabtyre cable (6 mm in diameter, 600 mm in length)				Horn flare: Aluminum, white, powder coating; Reflector horn: ABS resin, white; Rear cover: ABS resin, gray; Bracket screws and bolts: Stainless steel
Dimensions	222 (W) x 179 (H) x 234 (D) mm (8.7" x 7.0" x 9.2")		285 (W) x 227 (H) x 277 (D) mm (11.2" x 8.9" x 10.9")		
Weight	1.1kg (2.4 lbs)	1.3kg (2.9 lbs)	1.7kg (3.1 lbs)	2kg (4.4 lbs)	
Dust/Water Protection	IP65				
UL Code	--				UL 1480 UUMW, ULC-S541
Operating Temperature	-20°C to +55°C (-4°F to 131°F)				-40°C to +66°C (-40°F to 151°F)
Option	Swivel bracket: YS-151S (can be used with the supplied bracket)				

Optional Accessories SC Series Horns

Swivel Bracket

YS-151S

Accessory Reference on page 105

Paging Horn Speaker

SC-651

- Newly developed polyimide diaphragm ensures durability during 50W output
- Paging horn speaker for voice paging and tone signaling distribution
- Weather-Resistant to withstand demanding environmental conditions
- Shock-resistant aluminum oval horn
- IP65 certified weatherproof construction
- Wide temperature range: -20°C to 55°C

Model	SC-651
Rated Input (100V line)	50W
Rated Impedance	16Ω
Sensitivity (1W, 1m)	109 dB
Frequency Response	250 Hz – 6 kHz
Finish	Horn flare: Aluminum, off-white, powder coating Reflector horn: ABS resin, off-white Bracket holder: Aluminum, gray, powder coating Bracket: Stainless steel
Dimensions	430 (W) x 297.5 (H) x 327 (D) mm (16.9" x 11.7" x 12.9")
Weight	3.4kg (7.5 lbs)
Dust/Water Protection	IP65
Operating Temperature	-20°C to +55°C (-4°F to 131°F)

"Reassurance," "Reliability," and "Emotion"
- Created by TOA
• Security and Safety
• Information and Communication
• Professional Audio

Combination Type Reflex Horn Speakers

Horn Speaker

TC-631
TC-631M

- Both high-impedance (70V/100V lines) models and low-impedance (8Ω/15W model, 16Ω/30W model) models available
- Two power ratings: 30W and 50W
- Stainless steel hardware (screws, bolts, nuts), and powder-coated horn and bracket ensure superb weatherproofing and corrosion-resistance.
- Shock-resistant aluminum round horn
- Compliance with IP65
- Requires drivers

Model	TC-631	TC-631M
Rated Input (100V line)	30W	
Rated Impedance	16Ω	100V line: 330Ω (30W), 670Ω (15W), 1kΩ (10W), 2kΩ (5W) 70V line: 170Ω (30W), 330Ω (15W), 670Ω (7.5W), 1kΩ (5W), 2kΩ (2.5W)
Sensitivity (1W, 1m)	110 dB	
Frequency Response	200 –6,000 Hz	
Finish	Horn flare: Aluminum, off-white, powder coating Reflector horn: ABS resin, off-white Bracket holder: Aluminum, gray, powder coating Bracket: Steel, gray, powder coating	
Dimensions	ø500 (W) x 463(D) mm (ø19.7" x 18.2")	
Weight	4.1kg (9 lbs)	4.5kg (9.9 lbs)
Dust/Water Protection	IP65	
Operating Temperature	-20°C to +55°C (-4°F to 131°F)	

Separate Type Horn Speakers

Reflex Horn

TH-660

- External stainless steel hardware (screws, bolts, nuts), and powder-coated horn and bracket ensure superb weatherproofing and corrosion-resistance.
- Shock-resistant aluminum round horn
- Requires drivers

Model	TH-660
Sensitivity (1W, 1m)	110 dB*
Frequency Response	200 Hz – 6 kHz*
Finish	Horn flare: Aluminum, off-white, powder coating Bracket: Steel, gray, powder coating
Dimensions	ø600 – 425 (D) mm (23.6" x 16.7")
Weight	3.6kg (7.9 lbs)

*When operated with TU-631/631M/651/651M driver unit.

Separate Type Horn Speakers

Driver Unit

TU-631
TU-651

Driver Unit

TU-631M
TU-651M

- Both high-impedance (70V/100V lines) models and low-impedance (16 Ω) models available.
- Two power ratings: 30 W and 50 W.
- Input impedance selector on high-impedance models facilitates input impedance matching from the outside.
- IP65 certified weatherproof construction

Model	TU-631	TU-651	TU-631M	TU-651M
Rated Input	30W	50W	30W	50W
Rated Impedance	16Ω		100V line: 330Ω (30W), 670Ω (15W), 1kΩ (10W), 2kΩ (5W) 70V line: 170Ω (30W), 330Ω (15W), 670Ω (7.5W), 1kΩ (5W), 2kΩ (2.5W)	100V line: 200Ω (50W), 330Ω (30W), 670Ω (15W) 70V line: 100Ω (50W), 200Ω (25W), 330Ω (15W), 670Ω (7.5W)
Sensitivity (1W, 1m)	110 dB*			
Frequency Response	150 Hz – 6 kHz *			
Finish	Flange: Aluminum, gray, powder coating; Rear cover: ABS resin, gray; Screws: Stainless steel			
Dimensions	ø139 x 106 (D) mm (ø5.5" x 4.2")		ø139 x 149 (D)mm (ø5.5" x 5.9")	
Weights	1.4kg (3.1 lbs)	2kg (4.41 lbs)	1.9kg (4.2 lbs)	2.7kg (6 lbs)
Dust/Water Protection	IP65*			
Operating Temperature	-20°C to +60°C (-4°F to 140°F)	-20°C to +55°C (-4°F to 131°F)	-20°C to +60°C (-4°F to 140°F)	-20°C to +55°C (-4°F to 131°F)

*When operated with TH-660.

Optional Accessories TH-660

Swivel Bracket

YS-151S

Accessory Reference on page 105

Wall Mount Box Speakers

BS-1034

BS-1034S

- Low profile
- Easy and quick installation
- Creates a distinctly different impression depending on whether it is installed horizontally or vertically
- Two colors selectable: off-white, which matches any interior style, and silver, which adds a quality appearance
- Ideally suited for BGM and announcements

Model	BS-1034	BS-1034S
Rated Input (100V line)	10W	
Rated Impedance	100V line: 1kΩ (10W), 2kΩ (5W), 3.3kΩ (3W), 10kΩ (1W) / 70V line: 500Ω (10W), 1kΩ (5W), 2kΩ (2.5W), 3.3kΩ (1.5W), 10kΩ (0.5W)	
Sensitivity (1W, 1m)	90 dB	
Frequency Response	120 Hz – 20 kHz	
Speaker Component	Low: 12 cm (5") cone-type, High: Balance dome-type	
Finish	Enclosure: HIPS resin, off-white Grille: Steel plate net, off-white	Enclosure: HIPS resin, silver Grille: Steel plate net, silver
Dimensions	210 (W) x 330 (H) x 80 (D) mm (8.3" x 13" x 3.1")	
Weight	1.4kg (3.1 lbs)	

BS-678

- Stylish, compact and unobtrusive design
- Quick and easy installation, which saves time on setting-up
- Horizontal / vertical installation
- A push-type input terminal allows easy cable connections and bridge wiring
- Ideally suited for BGM and announcements

BS-680FC / BS-680U

- Innovative design
- Quick and easy installation
- Strong all-metal body
- Horizontal / vertical installation
- Wall / in-wall mounting
- Ideally suited for voice alarm system application
- Two steatite screw terminal blocks and thermal fuse
- BS-680U is certified to UL 1480 UUMW, ULC-S541

SIGNALING c UL LISTED

Model	BS-678	BS-680FC *(Replaced by BS-680U)*	BS-680U
Rated Input (100V line)	6W (100 V line), 3 W (70 V line)		6W
Rated Impedance	100V line: 1.7kΩ (6W), 3.3kΩ (3W), 6.7kΩ (1.5W), 13kΩ (0.8W) 70V line: 1.7kΩ (3W), 3.3kΩ (1.5W), 6.7kΩ (0.8W), 13kΩ (0.4W)		70V line: 830Ω (6W), 1.67kΩ (3W), 5kΩ (1W) 25V line: 105Ω (6W), 210Ω (3W), 650Ω (1W)
Sensitivity (1W, 1m)	94 dB		
Frequency Response	150 Hz – 20 kHz		
Speaker Component	16 cm (6") double cone-type		
UL Code	--		UL 1480 UUMW, ULC-S541
Finish	Enclosure: Wood, white; Grille: Surface-treated steel plate net, white	Enclosure: Steel plate, off-white Grille: Stainless steel punching net, off-white	Baffle, Cabinet: Steel plate, white, powder coating Grille: Surface-treated steel plate mesh, white, paint
Dimensions	250 (W) x 190 (H) x 110 (D) mm (9.8" x 7.5" x 4.3")	310 (W) x 190 (H) x 87.2 (D) mm (12.2"x7.5"x3.4")	310 (W) x 190 (H) x 90 (D) mm (12.2"x7.5"x3.5")
Weight	1.7kg (3.7lbs)	2.6kg (5.7 lbs)	

Box Speakers

Universal Speaker

BS-1030B
BS-1030W

- Aesthetically pleasing design blends in modern buildings and other facilities, such as boutique, restaurant and amusement park
- Cost-effective high power PA box speaker
- 2-Way bass reflex speaker
- Low impedance (8Ω) or high impedance (100V/70V) selectable by rotary switch
- Splashproof construction in compliance with IPX4

Model	BS-1030B/BS-1030W
Rated Input (100V line)	30W
Rated Impedance	8Ω / 100V line: 330Ω (30W), 500Ω (20W), 670Ω (15W), 1kΩ (10W), 2kΩ (5W) 70V line: 170Ω (30W), 250Ω (20W),330Ω (15W), 500Ω (10W), 1kΩ (5W)
Sensitivity (1W, 1m)	90 dB
Frequency Response	80 Hz – 20 kHz
Speaker Component	12 cm (5") dynamic cone-type + dome-type
Finish	Enclosure: ABS resin, black or white Grille: Surface treated steel plate, black or white, powder coating
Dimensions	196 (W) x 290 (H) x 150 (D) mm (7.7" x 11.4" x 5.9")
Weight	2.5kg (5.5 lbs)
Accessory	Bracket x 1, bracket mounting screw x 2, bracket mounting washer x 2

Optional Accessories BS-1030

Wall Mount Bracket

SP-410

** Special Order Product

Wall Mount Bracket

SP-420

Wall/Ceiling Mount Bracket

WCB-13B**
WCB-13W**

Accessory Reference on page 107

Pendant/Projection Speakers

Pendant Speaker

PE-64
PE-304
Q-PE-304BK

- Stylish and outstanding design inspired by the finest lighting fixtures
- Sturdy cable extendable up to 5 meters
- Paintable
- Input impedance easily changeable
- Ideally suited for BGM and announcements
- Q-PE-304BK Black version

Projection Speaker

PJ-64
PJ-304
Q-PJ-304BK

- Stylish and outstanding design inspired by the finest lighting fixtures
- Flexible speaker direction adjustment with accessory brackets
- Paintable
- Input impedance easily changeable
- Ideally suited for BGM and announcements
- Q-PJ-304BK Black version

Pendant Speaker

PE-304BU
PE-304WU
PE-604BU
PE-604WU

SIGNALING c UL LISTED

- Stylish and outstanding design inspired by the finest lighting fixtures
- Coaxial bass-reflex design featuring 12cm (5") cone-type woofer and a balanced-done tweeter
- 8Ω and 25V/70V/100V operation
- UL 1480 UUMW and ULC-S541 listed. Certified to work with emergency announcement systems
- Input impedance is easily changed with a rotary switch on the top of the speaker
- Ideally suited for BGM and announcements
- Hanging wire, safety wire, and speaker cable are pre-attached for quick and easy installation
- Gripple hangers facilitate speaker mounting height adjustment.

Model	PE-64	PE-304 / Q-PE-304BK	PE-304BU / PE-304WU	PE-604BU / PE-604WU	PJ-64	PJ-304 / Q-PJ-304BK
Rated Input (100V line)	6W	30W	30W	60W	6W	30W
Rated Impedance	100 line: 1.7kΩ (6W), 3.3kΩ (3W), 10kΩ (1W) 70V line: 1.7kΩ (3W), 3.3kΩ (1.5W), 10kΩ (0.5W)	100 line: 330Ω (30W), 500Ω (20W), 670Ω (15W), 1kΩ (10W), 2kΩ (5W) 70V line: 170Ω (30W), 250Ω (20W), 330Ω (15W), 500Ω (10W), 1kΩ (5W)	100 line: 300Ω (30W), 1kΩ (10W), 3.3kΩ (3W), 10kΩ (1.3W) 70V line: 170Ω (30W), 330Ω (15W), 1kΩ (5W), 3.3kΩ (1.5W), 10 kΩ (0.6W) 25V line: 170Ω (3.7W), 330Ω (1.9W) 1kΩ (0.6W), 3.3kΩ (0.2W), 10 kΩ (0.1W) Low Impedance: 8Ω	100 line: 170Ω (60W), 330Ω (30W), 670kΩ (15W), 3.3kΩ (3W) 70V line: 83Ω (60W), 170Ω (30W), 330Ω (15W), 670Ω (7.5W), 3.3 kΩ (1.5W) 25V line: 83Ω (7.5W), 170Ω (3.7W) 330Ω (1.9W), 670Ω (0.9W), 3.3kΩ (0.2W) Low Impedance: 8Ω	100 line: 1.7kΩ (6W), 3.3kΩ (3W), 10kΩ (1W) 70V line: 1.7kΩ (3W), 3.3kΩ (1.5W), 10kΩ (0.5W)	100 line: 330Ω (30W), 500Ω (20W), 670Ω (15W), 1kΩ (10W), 2kΩ (5W) 70V line: 170Ω (30W), 250Ω (20W), 330Ω (15W), 500Ω (10W, 1kΩ (5W)
Sensitivity (1W, 1m)	90 dB	91 dB	90 dB		90 dB	91 dB
Frequency Response	100 Hz – 18 kHz	70 Hz – 20 kHz	95 Hz – 20 kHz (-10 dB)	110 Hz – 20 kHz (-10 dB)	100 Hz – 18 kHz	70 Hz – 20 kHz
Speaker Component	12cm (5") cone-type	12cm (5") cone-type + balanced dome tweeter	12cm (5") cone-type + balanced dome tweeter (coaxial)		12cm (5") cone-type	12cm (5") cone-type + balanced dome tweeter
Finish	**PE-64 & PE-304:** Enclosure: HIPS resin, off-white; Grille: Surface-treated steel plate net, off-white, paint **Q-PE-304BK:** Enclosure: HIPS resin, black; Grille: Surface-treated steel plate net, black, paint		**PE-304BU & PE-604BU :** Enclosure: ABS resin, black; Grille: Surface-treated steel plate mesh black, paint **PE-304WU & PE-604WU:** Enclosure: ABS resin, white; Grille: Surface-treated steel plate mesh, white, paint		**PE-64 & PE-304:** Enclosure: HIPS resin, off-white; Grille: Surface-treated steel plate net, off-white, paint **Q-PE-304BK:** Enclosure: HIPS resin, black; Grille: Surface-treated steel plate net, black, paint	
Dimensions	ø186 x 251 (H) mm (ø7.3" x 9.9") (unit only)		ø186 x 275 (H) mm (ø7.3" x 10.83") (unit only)		ø186 x 369 (H) mm (ø7.3" x 14.5")	
Weight	1.5kg (3.3 lbs)	2.1kg (4.6 lbs)	2kg (4.41 lbs)	2.9kg (6.39 lbs)	1.5kg (3.3 lbs)	2.1kg (4.6 lbs)
UL Code	--		UL1480 UUMW, ULC-S541		--	

Projection Speaker

PJ-100W

Projection Speaker

PJ-200W

Model	PJ-100W	PJ-200W
Rated Input (100V line)	10W	20W
Rated Impedance	50V line: 250Ω (10W), 500Ω (5W), 1kΩ (2.5W), 2kΩ (1.25W), 4kΩ (0.63W) 70V line: 500Ω (10W),1kΩ (5W), 2kΩ (2.5W), 4kΩ (1.25W) 100V line: 1kΩ (10W), 2kΩ (5W), 4kΩ (2.5W)	50V line: 125Ω (20W), 250Ω (10W), 500Ω (5W), 1kΩ (2.5W), 3kΩ (1.25W) 70V line: 250Ω (20W), 500Ω (10W), 1kΩ (5W), 2kΩ (2.5W) 100V line: 500Ω (20W), 1kΩ (10W), 2kΩ (5W)
Sensitivity (1W, 1m)	92 dB	95 dB
Frequency Response	65 Hz – 15 kHz	50 Hz – 20 kHz
Speaker Component	12cm (5")	16cm (6")
Finish	Cabinet, Cover: ABS Resin, off-white Bracket: SPCC, off-white	
Dimensions	160 (W) x 200 (H) x 195 (D) mm (6.3" x 7.9" x 7.7")	200 (W) x 255 (H) x 250 (D) mm (7.9" x 10" x 9.8")
Weight	1.8kg (3.97 lbs)	2.5kg (5.5 lbs)

- Wide range projection speaker
- 2 rated input model 10W and 20W available

Interior Design Speakers

- Sleek, stylish appearance blends well with modern architecture for background/foreground music and paging systems
- Minimum reflection design reduces sound wave reflections typical of conventional bracket-mounted "box" type speakers
- Two-way, sealed enclosure
- Weather-resistant versions (H-2WP/H-3WP)
- Wide coverage area: (H-1) 120°H x 100°V
  (H-2/H-2WP) 100°H x 60°V
  (H-3/H-3WP) 140°H x 70°V
- Loudspeaker components rotate internally to allow flexible aiming (H-1/H-2/H-2WP)
- Built-in passive crossover with optimized filter slopes
- Paintable grille
- Fire-resistant ABS resin enclosure (H-1/ H-2)

2-Way Flush Mount Speaker System

H-1

2-Way Surface Mount Speaker System

H-2
H-2WP

2-Way Wall Mount Speaker System

H-3
H-3WP

Model	H-1	H-2	H-2WP	H-3	H-3WP
Power Handling Capacity	90W (continuous program)	120W (continuous program)		150W (continuous program)	
Rated Input (100V line)	12W (16Ω)	12W (16Ω)		30W (16Ω)	
Rated Impedance	4Ω or 16Ω / 100V line: 830Ω (12W), 1.7kΩ (6W), 3.3kΩ (3W) 70V line: 420Ω (12W), 830Ω (6W), 1.7kΩ (3W), 3.3kΩ (1.5W)			8Ω or 16Ω/100V line: 330Ω (30W), 670Ω (15W), 1.3kΩ (7.5W) 70V line: 170Ω (30W), 330Ω (15W), 670Ω (7.5W), 1.3kΩ (3.75W)	
Sensitivity (1W, 1m)	85 dB	88dB		89dB	
Frequency Response	120Hz – 20kHz	100Hz – 20kHz			
Speaker Component	Low: 8 x 5cm cone-type, High: Balanced dome-type	Low: 10cm cone-type, High: Balanced dome-type		Low: 10cm cone-type x 2, High: 2.5cm dome-type (neodymium magnet)	
Finish	Cover: Fire-resistant ABS resin, white, paint Punched net: Steel plate, white paint Adapter frame: Stainless steel	Frame: Fire-resistant ABS resin, white, paint Base frame: Steel plate Punched net: Steel plate, white paint	Frame: Fire-resistant ABS resin, white, paint Base frame: Steel plate Punched net: Steel plate, white powder coating	Enclosure: Fire-resistant ABS resin, black Frame: Fire-resistant ABS resin, off-white Punched net: Stainless plate, off-white, paint Base Frame: Steel plate, plating	Enclosure: Fire-resistant ABS resin, black Frame: Fire-resistant ABS resin, off-white Punched net: Steel plate (zinc plating), off-white, powder coating Base Frame: Stainless steel
Dimensions	312 (W) x 126 (H) x 90(D) mm (12.3" x 5" x 3.5")	ø268 x 111 (H) mm (10.5" x 4.4")		295 (W) x 318 (H) x 129 (D) mm (11.6" x 12.5" x 5.1")	
Weight	1.5kg (3.3 lbs)	2.1kg (4.63 lbs)		3.3kg (7.3 lbs)	
Dust/Water Protection	—	—	IP64	—	IPX4

Wall/Ceiling Mount Subwoofer System

HB-1

- High-power 8" woofer with 110mm ferrite magnet and aluminum bobbin
- Acoustic super-woofer with acoustical bandpass filtering construction
- Thin-wall metal frame, with large interior volume for excellent low-frequency audio response, plus efficient heat dispersion
- Installs Between standard studs on 16 inches centers
- TOA designed brackets allow simplified "blind" flush mounting in wall or ceiling

Model	HB-1
Power Handling Capacity	240W (continuous program)
Rated Impedance	8Ω
Sensitivity (1W, 1m)	91dB
Frequency Response	45 – 200Hz
Speaker Component	20cm cone speaker
Finish	Enclosure; Steel plate, black paint Front Frame; Fire-resistant ABS resin, off-white, paint Punched net; Steel plate, off-white, paint
Dimensions	430 (W) x 544 (H) x 135 (D) mm (16.9" x 21.4" x 5.3")
Weight	11kg (24.3 lbs)
Option	Matching Transformer: MT-S0601

Optional Accessories

Adapter Frame

HY-H1

Equalization Module

E-04R
E-05R
E-06RB**
E-07S

Matching Transformer

MT-S0601

** Special order product

Accessory Reference on page 108

F Series Wide-dispersion Speakers

- Compact box speaker for music and voice paging distribution
- Octagonal horn design for smooth coverage
- Adjustable high frequency dispersion (F-2000 models)
- Extruded cabinet design improves low frequency performance
- Splashproof design in compliance with IPX4, available on models "BTWP/WTWP"
- Great variety of brackets available
- Paintable enclosure and front grille

F-1000BT
F-1000BTWP
F-1000WT
F-1000WTWP

- LF Driver: 4" cone woofer
- HF Driver: balanced dome tweeter
- Dispersion: 90°H x 90°V

F-1300BT
F-1300BTWP
F-1300WT
F-1300WTWP

- LF Driver: 5" cone woofer
- HF Driver: 1" dome tweeter
- Dispersion: 110°H x 100°V

F-2000BT
F-2000BTWP
F-2000WT
F-2000WTWP

- LF Driver: 8" cone woofer
- HF Driver: 1" hard-dome dome tweeter
- Dispersion (adjustable): 110°H x 100°V; 80°H x 80°V

Model	F-1000BT F-1000WT	F-1000BTWP F-1000WTWP	F-1300BT F-1300WT	F-1300BTWP F-1300WTWP	F-2000BT F-2000WT	F-2000BTWP F-2000WTWP
Rated Input (100V line)	15W		30W		60W	
Rated Impedance	8Ω 100V line: 670Ω (15W), 2kΩ (5W), 3,3kΩ (3W), 10kΩ (1W) 70V line: 330Ω (15W), 670Ω (7.5W), 2kΩ (2.5W), 3,3kΩ (1.5W), 10kΩ (0.5W)	100V line: 670Ω (15W), 2kΩ (5W), 3,3kΩ (3W), 10kΩ (1W) 70V line: 330Ω (15W), 670Ω (7.5W), 2kΩ (2.5W), 3,3kΩ (1.5W), 10kΩ (0.5W)	8Ω 100V line: 330Ω (30W), 1kΩ (10W), 3,3kΩ (3W), 10kΩ (1W) 70V line: 170Ω (30W), 330Ω (15W), 1kΩ (5W), 3,3kΩ (1.5W), 10kΩ (0.5W)	100V line: 330Ω (30W), 1kΩ (10W), 3,3kΩ (3W), 10kΩ (1W) 70V line: 170Ω (30W), 330Ω (15W), 1kΩ (5W), 3,3kΩ (1.5W), 10kΩ (0.5W)	8Ω 100V line: 170Ω (60W), 330Ω (30W), 670Ω (15W), 3.3kΩ (3W) 70V line: 83Ω (60W), 170Ω (30W), 330Ω (15W), 670Ω (7.5W), 3.3kΩ (1.5W)	100V line: 170Ω (60W), 330Ω (30W), 670Ω (15W), 3.3kΩ (3W) 70V line: 83Ω (60W), 170Ω (30W), 330Ω (15W), 670Ω (7.5W), 3.3kΩ (1.5W)
Sensitivity (1W, 1m)	87 dB		90dB		92dB	
Frequency Response	85 Hz – 20 kHz		80 Hz – 20 kHz		65 Hz – 20 kHz	
Speaker Component	Low: 10cm (4") cone-type, High: Balanced dome tweeter		Low: 13cm (5") cone-type, High: 25mm (1") dome tweeter		Low: 20cm (8") cone-type, High: 25mm (1") dome tweeter	
Finish	Enclosure: HIPS, black or white Punched net: Surface-treated steel plate, black or white, paint		Enclosure: HIPS, black or white Punched net: Surface-treated steel plate, black or white, paint		Enclosure: HIPS, black or white Punched net: Surface-treated steel plate, black or white, paint	
Dimensions	130 (W) x 202 (H) x 131(D) mm (5.1" x 7.9" x 5.2")		162 (W) x 250 (H) x 161(D) mm (6.4" x 9.8" x 6.3")		244 (W) x 373 (H) x 235(D) mm (9.6" x 14.7" x 9.3")	
Weight	2kg (4.4 lbs)	2kg (4.4 lbs)	3.6kg (7.9 lbs)		7.4kg (16.3 lbs)	
Dust/Water Protection	—	IPX4	—	IPX4	—	IPX4
Option	Board hanger bracket: HY-BH10B,Ceiling mount bracket: HY-CM10B/W, Cluster braket: HY-CL10B	—	Board hanger bracket: HY-BH10B,Ceiling mount bracket: HY-CM10B/W, Cluster braket: HY-CL10B	—	Ceiling mount bracket: HY-CM20B/W, Cluster braket: HY-CL20B	—

F Series Optional Brackets

»» Cluster Bracket

HY-CL10B*

»» Ceiling Mounting Bracket

HY-CM10B*

»» Ceiling Mounting Bracket

HY-CM10W*

»» Board Hanger Bracket

HY-BH10B*

»» Cluster Bracket

HY-CL20B*

»» Ceiling Mounting Bracket

HY-CM20B*

»» Ceiling Mounting Bracket

HY-CM20W*

* Indoor use only.

Accessory Reference on page 105

F Series Wide-dispersion Ceiling Speakers

- NEW! NOW AVAILABLE WITH A BLACK GRILL Q-F122GRBK for F-122C and F-2352C models
- Minimal high frequency roll off allows clear and well-balanced sound reproduction over a wide listening area
- Designed to blend into ceilings with a smooth, low-profile design, extra-wide dispersion
- Extra ease of use and higher cost-effectiveness with the metal "back can" enclosure for the speaker rear. (F-122C, F-2352C, F-2852C, F-2322C models)
- F-2852CU2, F-2322CU2, F-2352CU2, F-122CU2 are certified to UL 1480 (UEAY), UL2043, CAN/CSA C222.2 No. 205 (UEAY7)

F-2852C, F-2852CU2

- 2-way speaker for high power
- Applications e.g. for high ceilings (3 to 6m)
- Wide-dispersion: 120° conical (1-4k Hz ave.)
- Diffuser for wide dispersion of high frequencies
- Metal back can

F-2322C, F-2322CU2

- Full range speaker for medium ceiling height (2 to 4 m)
- Wide-dispersion: 170° conical (1-4k Hz ave.)
- Metal back can

F-2352C, F-2352CU2

- 2-way speaker for medium ceiling height (2 to 4 m)
- Wide-dispersion: 170° conical (1-4k Hz ave.)
- Diffuser for wide dispersion of high frequencies
- Metal back can

F-122C, F-122CU2

- Equalizing controlled type full range speaker for medium ceiling height (2 to 4 m)
- Wide-dispersion: 180° conical (1-4k Hz ave.)
- Cost effective if many speakers are installed
- Heat-resistant back can
- Optimized for use with optional digital processors
- Diffuser for wide dispersion of high frequencies

F-2352SC

- 2-way wide range speaker with diffuser for low power applications and medium ceiling height (2 to 4m)
- Wide-dispersion: 155° conical (1-4k Hz ave.)
- Diffuser for wide dispersion of high frequencies
- For use in ceilings with minimal depth

F-1522SC

- Cost-effective compact full range speaker for medium ceiling height (2 to 4 m)
- Wide-dispersion: 160° conical (1-4k Hz ave.)
- Only 117 mm mounting depth
- Flat front panel

Note: CU2 version comes with 2 speakers in a box and 2 tile bridges.

Model	F-2852C	F-2322C	F-2352C	F-122C	F-2352SC	F-1522SC
Rated Input (100V line)	60W	30W			6W	
Rated Impedance	70V line: 83Ω (60W), 170Ω (30W), 330Ω (15W), 670Ω (7.5W), 3.3kΩ (1.5W) 25V line: 83Ω (7.5W), 170Ω (3.7W), 330Ω (1.9W), 670Ω (0.9W), 3.3kΩ (0.2W) 16Ω, 8Ω	100V line: 330Ω (30W), 1kΩ (10W), 3.3kΩ (3W), 10kΩ (1W) 70V line: 170Ω (30W), 330Ω (15W), 1kΩ (5W), 3.3kΩ (1.5W), 10kΩ (0.5W) 25V line: 170Ω (3.7W), 330Ω (1.9W), 1kΩ (0.6W), 3.3kΩ (0.2W), 10kΩ (0.06W) 16Ω, 8Ω			100V line: 1.7kΩ (6W), 3.3kΩ (3W), 10kΩ (1W), 20kΩ (0.5W) 70V line: 830Ω (6W), 1.7Ω (3W), 3.3kΩ (1.5W), 10kΩ (0.5W), 20kΩ (0.25W) 25V line: 830Ω (0.75W), 1.7Ω (0.4W), 3.3kΩ (0.2W), 10kΩ (0.6W), 20kΩ (0.03W) 16Ω, 8Ω	100V line: 1.7kΩ (6W), 3.3kΩ (3W) 70V line: 830Ω (6W), 1.7Ω (3W), 3.3kΩ (1.5W) 25V line: 830Ω (0.75W), 1.7Ω (0.4W), 3.3kΩ (0.2W) 16Ω, 8Ω
Sensitivity (1W, 1m)	91dB	90dB			89dB	88dB
Frequency Response	60 Hz – 20 kHz	70 Hz – 20 kHz (-10 dB), 50 Hz - 20 kHz (-20 dB)			80 Hz – 20 kHz (-10 dB), 50 Hz - 20 kHz (-20 dB)	65 Hz – 18 kHz (-10 dB), 45 Hz - 20 kHz (-20dB)
Mounting Hole Diameter	ø250 mm (9.84")	ø200 mm (7.87")				ø135 mm (5.32")
Speaker Component	Low: 16cm (6") cone-type, High: Dome-type	12cm (5") cone-type	Low: 12cm (5") cone-type, High: Balanced dome-type	12cm (5") cone-type	Low: 12cm (5") cone-type, High: Balanced dome-type	10cm (4") cone-type
Finish	Enclosure: Steel plate, plating; Baffle: Fire-resistant ABS resin, black Rim: Fire-resistant ABS resin, white; Punched net: Steel plate, white, paint				Baffle: Fire-resistant ABS resin, black Rim: Fire-resistant ABS resin, white Punched net: Steel plate, white, paint Dust proof bag: Artificial fiber, black	
Dimensions	ø280 x 227 (D) mm (ø11" x 8.9")	ø230 x 200 (D) mm (ø9.1" x 7.9")	ø230 x 229 (D) mm (ø9.1" x 9")		ø230 x 154 (D) mm (ø9.1" x 6.1")	ø155 x 117 (D) mm (ø6.1" X 4.6")
Weight	5.1kg (11.2 lbs)	3.7kg (8.2 lbs)			1.5kg (3.3 lbs)	1kg (2.2 lbs)
Accessory	Panel x1, Ceiling reinforcement ring x 1, Safety wire x 1, Paper pattern x 1				Panel x 1, Paper pattern x 1	
Option	Anchor hanging bracket: HY-AH1**, Tile bar bridge: HY-TB1	Anchor hanging bracket: HY-AH1**, Back can: HY-BC1, Tile bar bridge: HY-TB1, Trim ring: HY-TR1, F-2352C only: Black grill: Q-F122GRBK		Anchor hanging bracket: HY-AH1**, Back can: HY-BC1, Tile bar bridge: HY-TB1, Trim ring: HY-TR1 Controller module: E-03R Black grill: Q-F122GRBK	Back can: HY-BC1, Reinforcement ring: HY-RR2, Anchor hanging bracket: HY-AH1**Tile bar bridge: HY-TB1, Trim ring: HY-TR1 (HY-RR2 required for HY-AH1, HY-TB1, HY-TR1)	Reinforcement ring: HY-RR1

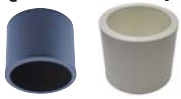
Model	F-2852CU2	F-2322CU2	F-2352CU2	F-122CU2
Rated Input (100V line)	60W	30W		
Rated Impedance	70V line: 83Ω (60W), 170Ω (30W), 330Ω (15W), 670Ω (7.5W), 3.3kΩ (1.5W) 25V line: 83Ω (7.5W), 170Ω (3.7W), 330Ω (1.9W), 670Ω (0.9W), 3.3kΩ (0.2W) 16Ω, 8Ω	70V line: 170Ω (30W), 330Ω (15W), 1kΩ (5W), 3.3kΩ (1.5W), 10kΩ (0.5W) 25V line: 170Ω (3.7W), 330Ω (1.9W), 1kΩ (0.6W), 3.3kΩ (0.2W), 10kΩ (0.06W) 16Ω, 8Ω		
Sensitivity (1W, 1m)	91dB	90dB		
Frequency Response	60 Hz – 20 kHz	70 Hz – 20 kHz		70 Hz – 20 kHz (-10 dB) 50 Hz - 20 kHz (-20 dB)
UL Code	CU Version Only: UL1480 (UEAY), UL2043, CAN/CSA C22.2 No.205 (UEAY7)			
Mounting Hole Diameter	ø250 mm (9.84")	ø200 mm (7.87")		
Speaker Component	Low: 16cm (6") cone-type, High: Dome-type	12cm (5") cone-type	Low: 12cm (5") cone-type, High: Balanced dome-type	12cm (5") cone-type
Finish	Enclosure: Steel plate, plating; Baffle: Fire-resistant ABS resin, black Rim: Fire-resistant ABS resin, white; Punched net: Steel plate, white, paint			
Dimensions	ø280 x 236 (D) mm (ø11" x 9.3")	ø230 x 209 (D) mm (ø9.1" x 8.2")	ø230 x 238 (D) mm (ø9.1" x 9.4")	
Weight	5.8kg (12.8 lbs)	4.3kg (9.5 lbs)		4.4kg (9.7 lbs)
Accessory	Front grille x 1, Tile bridge x 1, Safety wire (approx. 60cm (23.62")) x1, Paper pattern x1			
Option	--	Back can: HY-BC1, Trim ring: HY-TR1		Controller module: E-03R, Back can: HY-BC1, Trim ring: HY-TR1

Accessory Reference on page 104

F Series Wide-dispersion Ceiling Speakers

F Series Ceiling Speakers Optional Accessories

Back Can
HY-BC1 (black)
Q-HY-BC1W (white)



Trim Ring
HY-TR1

Tile Bar Bridge
HY-TB1

Anchor Hanging Bracket
HY-AH1**

Drywall Rough-in Kit
F-DRYWALLKIT

Reinforcement Ring
HY-RR1

Reinforcement Ring
HY-RR2

Shallow Back Can for F-2352SC
Q-HY-BC2

Equalization for F-122C
E-03R

5070723950 - CU2 version tile bridge included with F-122CU2, F-2322CU2, F-2352CU2
5070724030 - CU2 version tile bridge included with F-2852CU2
7020116720 - Ceiling reinforcement ring, fits model F-2852C

Accessory Reference on page 104

Plane Wave Speakers

Compact Double-Sided Radiation Type
PW-1230DB**
PW-1230DW**

Large Double-Sided Radiation Type
PW-1430DB**
PW-1430DW**

Compact Single-Sided Radiation Type
PW-1230SB**
PW-1230SW**

Compact Single-Sided Radiation Type
PW-1430SB**
PW-1430SW**

- Flat speaker system equipped with a plane wave unit consisting of a diaphragm, buffer, magnet and case
- Sound radiated in narrow horizontal and vertical directivity patterns to deliver clear audio to a limited targeted area with minimal attenuation
- Splash-proof, IPX4
- Beam tilting function directs sound radiation about five degrees downward of the horizontal axis
- Built-in high-pass filter
- This speaker is ideal for information broadcast applications and can be found in railway stations

Model	PW-1230DB	PW-1230DW	PW-1230SB	PW-1230SW
Type of Radiation	Double-sided radiation (The side with the TOA logo affixed: Positive pressure wave, Rear: Negative pressure wave)		Single-side radiation	
Rated Impedance	100V line: 330Ω (30W), 670Ω (15W), 1kΩ (10W), 2kΩ (5W); 70V line: 170Ω (30W), 330Ω (15W), 670Ω (7.5W), 1kΩ (5W), 2kΩ (2.5W)			
Sensitivity	86 dB (1W, 1m equivalent measured at 4m, 1-10 kHz) 86 dB (1W, 1m measured at 1m, 1-10 kHz) (Beam tilting: FLAT, High pass filter: OFF)		87 dB (1W, 1m equivalent measured at 4m, 1-10 kHz) 87 dB (1W, 1m measured at 1m, 1-10 kHz) (Beam tilting: FLAT, High pass filter: OFF)	
Frequency Response	300 Hz – 17.5 kHz (beam tilting: FLAT, high pass filter: OFF)		450 Hz – 17.5 kHz (beam tilting: FLAT, High pass filter: OFF)	
Speaker Unit	Plane wave unit (152 x 214 mm (5.98" x 8.43")) x 2			
Directivity Angle	Horizontal: 38° (2 kHz, 1/3 octave band), / Vertical: 75° (2 kHz, 1/3 octave band)			
Finish	Enclosure, Punched net and Mounting bracket: Stainless, black, semi-gloss, paint	Enclosure, Punched net and Mounting bracket: Stainless, light ivory, semi-gloss, paint	Enclosure, Punched net and Mounting bracket: Stainless, black, semi-gloss, paint	Enclosure, Punched net and Mounting bracket: Stainless, light ivory, semi-gloss, paint
Dimensions	524 (W) x 355 (H) x 60 (D)mm (20.63" x 13.98" x 2.36") (including mounting bracket)			
Weight	7.3 kg (16.09 lb) (including mounting bracket)		7.8 kg (17.2 lb) (including mounting bracket)	
Water Protection	IPX4			

Model	PW-1430DB	PW-1430DW	PW-1430SB	PW-1430SW
Type of Radiation	Double-sided radiation (The side with the TOA logo affixed: Positive pressure wave, Rear: Negative pressure wave)		Single-side radiation	
Rated Impedance	100V line: 330Ω (30W), 670Ω (15W), 1kΩ (7.5W), 2kΩ (5W); 70V line: 170Ω (30W), 330Ω (15W), 670Ω (7.5W), 1kΩ (5W), 2kΩ (2.5W)			
Sensitivity	88 dB (1W, 1m equivalent measured at 4m, 1-10 kHz) 85 dB (1W, 1m measured at 1m, 1-10 kHz) (Beam tilting: FLAT, High pass filter: OFF)		90 dB (1W, 1m equivalent measured at 4m, 1-10 kHz) 87 dB (1W, 1m measured at 1m, 1-10 kHz) (Beam tilting: FLAT, High pass filter: OFF)	
Frequency Response	250 Hz – 17.5 kHz (beam tilting: FLAT, high pass filter: OFF)		400 Hz – 17.5 kHz (beam tilting: FLAT, High pass filter: OFF)	
Speaker Unit	Plane wave unit (152 x 214 mm (5.98" x 8.43")) x 2			
Directivity Angle	Horizontal: 38° (2 kHz, 1/3 octave band), / Vertical: 75° (2 kHz, 1/3 octave band)			
Finish	Enclosure, Punched net and Mounting bracket: Stainless, black, semi-gloss, paint	Enclosure, Punched net and Mounting bracket: Stainless, light ivory, semi-gloss, paint	Enclosure, Punched net and Mounting bracket: Stainless, black, semi-gloss, paint	Enclosure, Punched net and Mounting bracket: Stainless, light ivory, semi-gloss, paint
Dimensions	831 (W) x 355 (H) x 60 (D)mm (32.72" x 13.98" x 2.36") (including mounting bracket)			
Weight	11.4 kg (25.13 lb) (including mounting bracket)		11.9 kg (26.23 lb) (including mounting bracket)	
Water Protection	IPX4			

** Special Order Product

Horn Array Speaker

The HA Series Horn Array is an outdoor long range speaker incorporating “line array speaker technology” for delivering the sound in the far distance. it consists of 4 steel long-throw CD horns with 4x50W @ 70 V (H version) or 16Ω (L version) weather-proof compression driver and metal hardware for stacking multiple horns.

⋙Horn Array Speaker

HA-450H**
HA-450L**

- Outdoor long range speaker incorporating "line array speaker technology"
- Less sound decay and can deliver sound about twice as far as conventional outdoor speakers for wireless system (when compared with reflex horn speaker and straight horn speaker made by TOA Corporation).
- The sound is mild near-by the speaker and clear far away from the speaker.

Model	HA-450H	HA-450L
Rated Input	50W x 4 (Max. at 70V)	50W x 4
Impedance	100Ω (50W), 200Ω (25W), 330Ω (15W, 670Ω (7.5W) (Individual Driver: Selectable by rotary switch)	16Ω
Sound Pressure Level	110dB (1W, 1m)	
Frequency Response	150 Hz – 6,000 Hz	
Finish	Horn: Aluminum die casting, beige, powder coating; Driver Unit Case: Weatherproof ABS resin, brown; Bracket: Rolled steel plate, powder coating	
Dimensions	503 (W) x 827 (H) x 599 (D) mm (19.8" x 32.55" x 23.62")	
Weight	50 kg (110 lb)	

** Special Order Product

Horn Array Speaker Optional Accessories

⋙Driver Unit
TU-651

⋙Driver Unit
TU-651M

For specifications and complete details see page 53

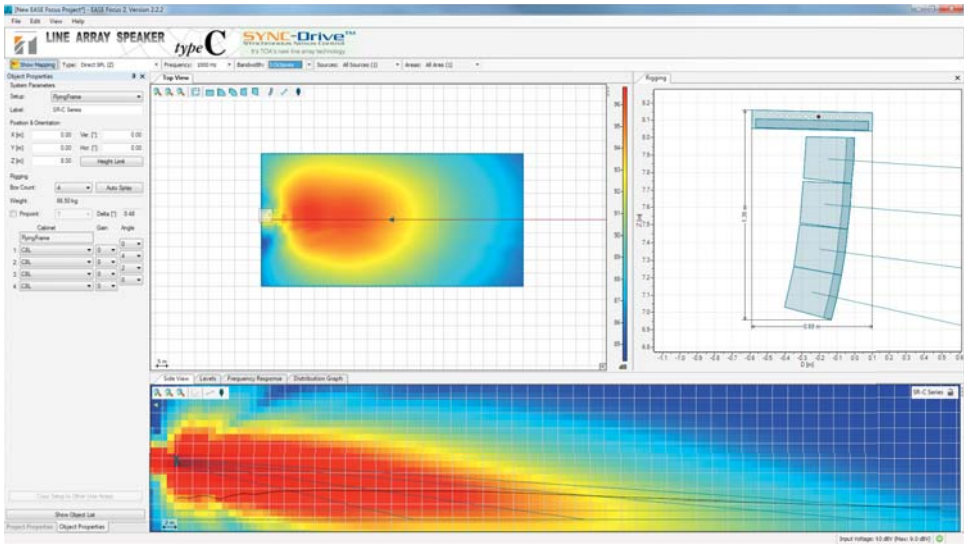
EASE Focus 2 - Generic Aiming & Acoustic Modeling Software

TOA Canada Corporation uses EASE Focus 2 for system design.

EASE Focus 2 is a three-dimensional, acoustic simulation software for the configuration and modeling of line array systems, digitally steered columns and conventional loudspeakers.

EASE Focus 2 is free for the end user but loudspeaker companies need to license their brand in order to add loudspeakers to the database.

- 3D modeling of direct sound, displayed in horizontal and vertical cutting planes.
- Support for EASE GLL files and data exchange with EASE and other AFMG software packages.
- Export your full array configuration for further use in EASE.
- Capability to use multiple sound sources, both line array systems and regular loudspeakers, in a single project.
- Support for digitally steered columns and other configurable loudspeakers; this requires an additional proprietary DLL that can provide e.g. beam steering filters.
- Virtual equalizer for tuning a line array in the simulation.
- Full frequency range from 20 Hz to 20 kHz.
- High accuracy due to high internal data resolution and GLL data format.
- Many helpful features for pre-production and on-site setup, e.g. extensive PDF-reports, additional rigging details, etc.



** Special Order Product

Line Array Speaker Type A

TOA's Type A Full Size, Two-Way Line Array Speakers feature a linear wave front control technology that creates sound fields with uniform sound pressure and high sound clarity. The SR-A12L and SR-A12S are two-way line array speakers ideal for long (SR-A12L) or short (SR-A12S) distance sound transmission. The SR-A Series can utilize bi-amplification methods for improved frequency tuning and is complimented by using the optional D-901 or D-2008 Digital Signal Processors.

SR-A12L
SR-A12LWP

SR-A12S
SR-A12SWP

- Designed for wide bandwidth response
- Compact and powerful 2-way modular speaker units used in multiple configurations as required to deliver greater output power with a more extended frequency response
- High-performance driver units
- Each Type A Series speaker module contains a 30cm (12") low frequency unit and a high-frequency horn attached to two compression drivers for greater output
- Wavefront control throat function to obtain the best possible performance from the high frequency drivers
- Simple maintenance and servicing for permanent installations

Model	SR-A12L	SR-A12LWP	SR-A12S	SR-A12SWP
Power Handling Capacity	Continuous program, Low Frequency: 450W, High Frequency 180W			
Rated Impedance	Low Frequency: 8Ω, High Frequency: 16Ω			
Sensitivity (1W, 1m)	Low Frequency: 98dB, High Frequency: 110dB		Low Frequency: 98dB, High Frequency: 109dB	
Frequency Response	50 – 20,000 Hz (when using an optional DSP processor)			
Speaker Component	Low Frequency: 30cm cone type; High Frequency: Wave front control horn 90° (horizontal) x 5° (vertical) + compression driver x 2		Low Frequency: 30cm cone type; High Frequency: Wave front control horn 90° (horizontal) x 15° (vertical) + compression driver x 2	
Directivity Angle	Horizontal: 90°, Vertical: 5°		Horizontal: 90°, Vertical: 15°	
Finish Enclosure:	Plywood, black, paint	Plywood, black, urethane coating	Plywood, black, paint	Plywood, black, urethane coating
Front grille:	Punched steel plate, black, acrylic paint	Punched stainless steel, black, paint	Punched steel plate, black, acrylic paint	Punched stainless steel, black, paint
Dimensions	740 (W) x 433 (H) x 469 (D) mm (29.1" x 17" x 18.5")		740 (W) x 433 (H) x 467 (D) mm (29.1" x 17" x 18.4")	
Weight	49 kg (180 lbs)	51 kg (112.4 lbs)	47kg (103.6 lbs)	48kg (105.8 lbs)
Water Protection	--	IPX4	--	IPX4
Accessory	Joint plate x 2, joint plate mounting bolt (M10) x 16			
Option	Rigging Frame: SR-RF12	Rigging Frame: SR-RF12WP	Rigging Frame: SR-RF12	Rigging Frame: SR-RF12WP
Digital Processor:	D-901 or D-2008			

Line Array Speaker Type A - Subwoofer

SR-A18B

- Designed for use in conjunction with the SR-A Series Line Array Speakers
- Compact indoor subwoofer system
- High-power 18" woofer, 720W, 8 ohm
- Ideal for reproducing dynamic low-frequency sound for both permanent and temporary installations

Model	SR-A18B
Power Handling Capacity	Continuous program: 720W
Rated Impedance	8Ω
Sensitivity (1W, 1m)	90 dB
Frequency Response	40 – 400Hz (when using optional DSP processor)
Speaker Component	46 cm cone-type
Finish	Enclosure: Plywood, black, paint; Front Grille: Punched steel plate, black, acrylic paint
Dimensions	740 (W) x 573 (H) x 698 (D) mm (29.1" x 23" x 27.5")
Weight	66 kg (145.5 lbs) (including accessories)
Accessory	Joint plate x 2, Joint plate mounting bolt (M10) x16)
Option	Rigging frame: SR-RF12, Digital processor: D-901 or D-2008

SR-A Series Optional Accessories

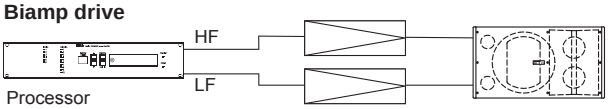
Mid-type - rigging frame, weather resistant
SR-RF12WP

Mid-type - tilt joint plate
SR-TP12

Mid-type - rigging for SR-A18B
SR-RF12

Connection Diagram

Biamp drive



Accessory Reference on page 106

Line Array Speaker Type C

TOA's Type C Mid-Size, Two-Way Line Array Speakers feature wave front control technology which creates a sound field with high sound clarity and uniform sound pressure level. Recommended digital processor is the D-901 or D-2008 (optional). They can be converted to operate in bi-amplifier or full-range modes with simple internal adjustment.

SR-C8L
SR-C8LWP

SR-C8S
SR-C8SWP

- Superior sound quality - Sync-Drive technology keeps the audio in phase with its sources at the speakers to create an ideal linear sound source.
- High-fidelity sound - due to the design of the speakers phase wave-front control technology, high-fidelity sound is produced without causing attenuation of high-frequency sound
- Adjustable sound coverage
- Resistant to feedback and enjoy reflection-free operation
- Single or bi-amp mode - by changing the position of an internal connector

Model	SR-C8L	SR-C8LWP	SR-C8S	SR-C8SWP
Power Handling Capacity	Continuous program: 360 W (Single-amp mode; Low 360 W, High: 180 W (Bi-amp mode)			
Rated Impedance	16Ω (single-amp mode); Low: 16Ω, High: 16Ω (bi-amp mode)			
Sensitivity (1W, 1m)	98 dB (single-amp mode) Low: 95dB, High: 110dB (bi-amp mode)			
Frequency Response	65 – 20,000 Hz (when using an optional DSP processor)			
Speaker Component	Low Frequency: 20 (8") cm cone type; High Frequency: Wave front control horn 110° (horizontal) x 5° (vertical) + compression driver x 2		Low Frequency: 20 (8") cm cone type; High Frequency: Wave front control horn 110° (horizontal) x 15° (vertical) + compression driver x 2	
Directivity Angle	Horizontal: 110°, Vertical: 5°		Horizontal: 110°, Vertical: 15°	
Finish Enclosure:	Plywood, black, urethane paint	Plywood, black, urethane coating	Plywood, black, urethane paint	Plywood, black, urethane coating
Finish Front grille:	Punched steel plate, black, paint	Punched stainless steel, black, paint	Punched steel plate, black, paint	Punched stainless steel, black, paint
Dimensions	526.6 (W) x 293 (H) x 296 (D) mm (20.73" x 11.54" x 11.65")		526.6 (W) x 293 (H) x 294 (D) mm (20.73" x 11.54" x 11.57")	
Weight	17 kg (37.48 lb)		16 kg (35.27 lb)	
Water Protection	--	IPX4	--	IPX4
Accessory	M8 connection bolt x 4			
Option	Cluster bracket: SR-CL8, Rigging frame: SR-RF8, Tilt joint bracket: SR-TP8, Digital processor: D-901 or D-2008	Rigging frame: SR-RF8WP Digital processor: D-901 or D-2008	Cluster bracket: SR-CL8, Rigging frame: SR-RF8, Tilt joint bracket: SR-TP8, Digital processor: D-901 or D-2008	Rigging frame: SR-RF8WP Digital processor: D-901 or D-2008

Line Array Speaker Type C - Subwoofer

SR-C15B
SR-C15BWP

- Designed for use in conjunction with the SR-C Series Line Array Speakers
- Indoor and outdoor versions available, weather-resistant version has cable connection
- 15" high power woofer
- 450 W continuous power handling

Model	SR-C15B	SR-C15BWP
Power Handling Capacity	Continuous program: 450 W	
Rated Impedance	8Ω	
Sensitivity (1W, 1m)	93 dB	
Frequency Response	40 – 400 Hz (when using an optional DSP processor)	
Speaker Component	38 cm (15") cone-type	
Finish Enclosure:	Plywood, black, urethane paint	Plywood, black, urethane coating
Finish Front grille:	Punched steel plate, black, paint	Punched stainless steel, black, paint
Dimensions	526.6 (W) x 594.8 (H) x 550 (D) mm (20.73" x 23.42" x 21.65")	
Weight	41 kg (90.39 lb)	
Accessory	M8 Connection bolt x 4	
Option	Rigging frame: SR-RF8 Digital processor: D-901 or D-2008	Rigging frame: SR-RF8WP Digital processor: D-901 or D-2008

SR-C Series Optional Accessories

Cluster bracket, black
SR-CL8

Rigging frame
SR-RF8

Rigging frame, weather resistant
SR-RF8WP

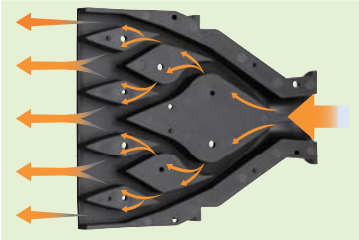
Rigging support bracket
SR-SB8

Tilt joint bracket
SR-TP8

Accessory Reference on page 106

SYNC Drive™

Synchronous Nexus Drive Control



Sync-Drive™ - Synchronous Nexus Control Drive Technology is a wavefront control technology that keeps sound waves in phase with their sources at the speakers to create an ideal linear sound source. Sync-Drive™ offers a uniform, high frequency sound field providing excellent sound clarity and minimal interference.

Speakers featuring Sync-Drive™ Technology:

- *SR-A Line Array Speakers*
- *SR-H Line Array Speakers*
- *SR-D - Line Array Speakers*
- *SR-C Line Array Speakers*
- *SR-S - Line Array Speakers*
- *HX-7*

Line Array Speaker Type D

TOA brought together it's proprietary line array technology and digital signal processing (DSP) technology in developing the SR-D8 Steerable Line Array Speaker. As well as processing both analog and digital audio input, this innovative speaker harnesses 8 built-in digital amplifiers to project sound waves to targeted areas with greater precision than is possible with conventional speakers. By digitally shaping the width and angle of acoustic beams, it can steer sound precisely to desired areas without requiring a change of installation location.

»» Steerable Active Line Array Speaker - Master

SR-D8-M**

»» Steerable Active Line Array Speaker - Slave

SR-D8-S**

»» Software

- A maximum total of 16 speakers (in up to four stacks) can be controlled as a single unit via GUI-operated software.
- The intuitive control software enables instant simulations that reduce the time required for designing systems and tuning their acoustic performance.
- The speaker comes with DSP functions, including gain, mute, compression, delay, auto -mixing, high/low pass filters, high/low shelving filters, and notch filters.
- Equipped with two analog audio input terminals and four digital audio input terminals for CobraNet™ connection, the speaker supports 6 x 2 matrix mixing.

Model	SR-D8-M	SR-D8-S
Power Consumption	320 W (rated output), 72 W (based on UL/CSA standards)	315 W (rated output), 72 W (based on UL/CSA standards)
Amplification System	Class D, 8 Channels	
Coverage	Horizontal: 90°; Vertical Beam Width: up to 45°; Vertical Beam Angle: ±45° (adjustable by using the supplied SR-D8 setting software)	
Output	30 W, 1 channel (1% THD+N)	
Frequency Response	130 Hz – 20 kHz	
Speaker Component	Low Frequency: 10 cm cone-type x 8; High Frequency: 2.5 cm balanced dome-type x 24	
Maximum SPL	Max. 93 dB SPL (A-weighted, pink noise, 30 m)	
Finish	Enclosure: MDF, white, paint; Front Grille: Punched steel plate, white, acrylic paint	
Dimensions	160 (W) x 895 (H) x 255 (D) mm (6.3" x 10.04" x 35.24")	
Weight	21 kg (46.3 lb)	
Accessory	Power supply cord (2m (6.56ft)) x 1, Removable terminal plug (3 P) x2, Removable terminal plug (2 P) x 1, CD-ROM (Setting software) x 1	Power supply cord (2m (6.56ft)) x 1, Removable terminal plug (3 P) x1, Removable terminal plug (2 P) x 1
Option	Wall mounting adapter: SR-D8CL, or SR-D8CS, Extension plate: SR-D8EP, Fixing bar: SR-D8FB, Hoisting bracket: SR-D8HB, Wall mounting bracket: SR-D8WB	

SR-D Series Optional Accessories

»» Wall mounting adapter
SR-D8CL**

»» Wall mounting adapter
SR-D8CS**

»» Extension plate
SR-D8EP**

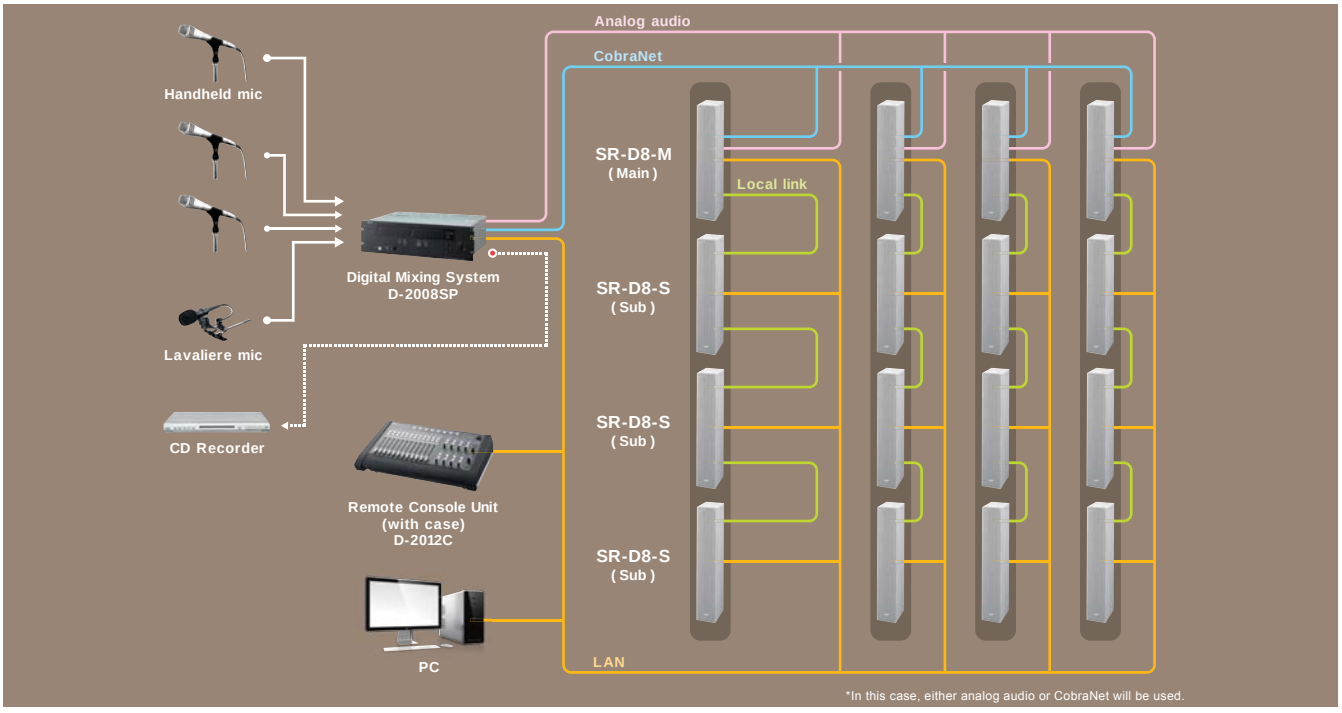
»» Fixing bar
SR-D8FB**

»» Hoisting bracket
SR-D8HB**

»» Wall mounting bracket
SR-D8WB**

Accessory Reference on page 107

SR-D Series System Example



** Special Order Product

Line Array Speaker Type S

SR-S4L
SR-S4LWP

SR-S4S
SR-S4SWP

- 2-way line array speaker with 8 10-cm (4") woofers and 24 high-frequency drivers, installed vertically
- Sync-Drive (Synchronous Nexus Control) technology create ideal linear sound source
- Clear sound with reduced attenuation over distance
- Speakers are reflection-free and feedback resistant
- Splashproof versions (SR-S4LWP/SR-S4SWP)
- Biamp or single amp drive possible
- A wide variety of optional mounting brackets are available
- Optional matching transformer MT-S0601 for high-impedance operation

Model	SR-S4L	SR-S4LWP	SR-S4S	SR-S4SWP
Power Handling Capacity	Continuous program: 600W			
Rated Impedance	8Ω			
Sensitivity (1W, 1m)	94dB		93dB	
Frequency Response	70 Hz – 20 kHz			
Speaker Component	Low: 10 cm (4") cone-type x 8, High: 2.5 cm (0.98") balanced dome-type x 24			
Directivity Angle	Horizontal: 90°; Vertical: 0°		Horizontal: 90°; Vertical: 10°	
Finish Enclosure:	MDF, white, paint	Plywood, white, urethane coating	MDF, white, paint	Plywood, white, urethane coating
Front grille:	Punched steel plate, white, acrylic paint	Punched stainless steel, white paint	Punched steel plate, white, acrylic paint	Punched stainless steel, white paint
Dimensions	160 (W) x 895 (H) x 255 (D) mm (63" x35.2" x 10")		160 (W) x 892 (H) x 303 (D) mm (63" x 35.1" x 11.9")	
Weight	16 kg (35.3 lbs)			
Dust/Water Protection	—	IPX4	—	IPX4

SR-S Series Optional Accessories

Extension Plate
SR-EP4

Wall Tilt Bracket
SR-TB4

Wall Mounting Bracket
SR-WB4
for SR-S4L/WP

Stand Adapter
SR-SA4

Protection Pad
SR-PP4

Extension Plate
SR-EP4WP

Wall Tilt Bracket
SR-TB4WP

Wall Mounting Bracket
SR-WB4WP
for SR-S4L/WP

Flying Bracket
SR-FB4

Floor Stand
SR-FS4
for SR-S4L/WP

Matching Transformer
MT-S0601

Accessory Reference on page 108

Line Array Speaker Type H

SR-H2L **SR-H2S** **SR-H3L** **SR-H3S**

- Slim line array with excellent directivity
- Narrow 84 mm design allows speakers to fit in well with the interior decor of the venue
- Sync-Drive (Synchronous Nexus Control) technology create ideal linear sound source
- Clear sound with reduced attenuation over distance
- Speakers are reflection-free and feedback resistant
- Curved speaker models for improved vertical dispersion
- A wide variety of optional mounting bracket is available
- Optional matching transformer MT-S0301 for high-impedance operation

Model	SR-H2L	SR-H2S	SR-H3L	SR-H3S
Power Handling Capacity	Continuous program: 180W		Continuous program: 360W	
Rated Impedance	8Ω			
Sensitivity (1W, 1m)	92dB	90dB	95dB	92dB
Frequency Response	80 Hz – 18 kHz	90 Hz – 17 kHz	110 Hz – 18 kHz	90 Hz – 17 kHz
Speaker Component	7cm (2.8") cone-type x 9		7cm (2.8") cone-type x 16	
Directivity Angle	Horizontal: 90°; Vertical: 0°	Horizontal: 90°; Vertical: 20°	Horizontal: 90°; Vertical: 0°	Horizontal: 90°; Vertical: 20°
Finish Enclosure:	MDF, white, urethane paint			
Front grille:	Punched steel plate, white, acrylic paint			
Dimensions	84 (W) x 668.4 (H) x 115 (D) mm (3.3" x 26.3" x 4.5")	84 (W) x 663.4 (H) x 115 (D) mm (3.3" x 26.1" x 4.5")	84 (W) x 1,186 (H) x 115 (D) mm (3.3" x 46.7" x 4.5")	84 (W) x 1,177.2 (H) x 157 (D) mm (3.3" x 46.3" x 6.2")
Weight	4.4 kg (9.7 lbs)	4.2 kg (9.3 lbs)	7.6 kg (16.8 lbs)	7.9 kg (17.4 lbs)

SR-H Series Optional Accessories

Wall Mounting Bracket
SR-WB3

Wall Tilt Bracket
SR-TB3

Flying Bracket
SR-FB3

Extension Plate
SR-EP3

Stand Adapter
SR-SA3

Matching Transformer
MT-S0301

Accessory Reference on page 107

Line Array Speaker Type T

SR-T5

- Sturdy impact-resistant construction
- Easy mounting
- Internal two-way passive crossover network circuitry for single amplifier operation
- Speaker's downward angle adjustable with accessory mounting bracket
- Horizontal angle adjustable in conjunction with optional SR-PB5 bracket
- Optional matching transformer MT-S0601 for high-impedance operation
- Safety wire supplied to prevent the speaker from falling during installation work and after installation
- Ideal for installations in sports facilities with strong reverberation, including; school gymnasiums - additional protector grille not required.

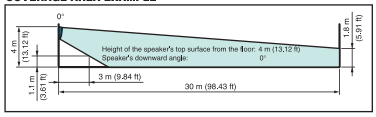
Model	SR-T5
Power Handling Capacity	Continuous pink noise: 250 W; Continuous program: 750 W
Rated Impedance	8Ω
Sensitivity (1W, 1m)	96dB (1W, 1m equivalent, measured at 4m)
Frequency Response	70 – 20 kHz
Speaker Component	Low Frequency: 13 cm (5.12") cone-type x 8, High Frequency: balanced dome-type x 24
Directivity Angle	Horizontal: 100°; Vertical: 35°
Finish	Enclosure: Plywood, black, urethane paint; Baffle: Polypropylene, black; Punched net & Mounting Bracket: Steel plate, black, acrylic paint
Dimensions	310 (W) x 1,239 (H) x 341 (D) mm (12.2" x 48.78" x 13.43")
Weight	29 kg (63.93 lb) (including accessories)
Accessory	Mounting bracket A x 1, Mounting bracket B x1, Bracket mounting bolt x 6, Slide cover x 5, Slide cover mounting screw x 10, Eye bolt x 1, Safety wire x 1
Option	Wall pan bracket: SR-PB5, Matching transformer: MT-S0601

SR-T Series Optional Accessories

»Wall pan bracket
SR-PB5

»Matching transformer
MT-S0601

COVERAGE AREA EXAMPLE


0°
4 m (13.12 ft)
1.8 m (5.91 ft)
Height of the speaker's top surface from the floor: 4 m (13.12 ft)
Speaker's downward angle: 0°
1.1 m (3.61 ft)
3 m (9.84 ft)
30 m (98.43 ft)

Accessory Reference on page 107

Compact Array Speakers

HX-5B
HX-5B-WP

HX-5W
HX-5W-WP

- Innovative modular speaker design includes four preassembled modules with four LF drivers and twelve HF dome tweeters
- Adjustable dispersion angle to 60, 45, 30 or 15 degrees
- Improved intelligibility through tailored coverage
- In-line driver arrangement for superior vertical coverage control
- Contoured waveguide-baffle for distortion-free coverage control
- High power handling; 600W continuous (200W pink noise)
- Splashproof versions (HX-5B-WP/HX-5W-WP)
- Parallel connectors - dual speakon and screw terminal
- A wide variety of optional mounting bracket is available

Model	HX-5B	HX-5W	HX-5B-WP	HX-5W-WP
Power Handling Capacity	Continuous program: 600W			
Rated Impedance	8Ω			
Sensitivity (1W, 1m)	96dB (60° mode), 97dB (45° mode), 98dB (30° mode), 99dB (15° mode)			
Frequency Response	70 Hz – 20 kHz (60° mode)		95Hz – 20 kHz (60° mode)	
Speaker Component	Low: 12cm (4") cone-type x 4, High: Balanced dome-type x 12			
Directivity Angle	Horizontal: 100°; Vertical: 60°, 45°, 30°, 15° variable			
Finish	Enclosure: Polypropylene, black or white; Punched net: Surface-treated steel plate, black or white, (rust proof coating on WP versions)			
Dimensions	408 (W) x 546 (H) x 342 (D) mm (16.1" x 21.5" x 13.5")			
Weight	16kg (35.3 lbs)			
Dust/Water Protection	—		IPX4	
Accessory	Hanging bracket x 2, Hex. wrench x 1			
Option	Matching transformer: MT-200, Speaker mounting bracket: HY-PF1B/W, HY-CW1B/W, HY-WM2B/W, HY-CN1B/W, Speaker stand: HY-ST1		Matching transformer: MT-200, Speaker mounting bracket: HY-PF1WP, HY-CW1WP, HY-WM1WP, HY-WM2WP, HY-CN1B/W-WP	

Subwoofers

FB-120B

FB-120W

- Compact subwoofer, ideal for use with HX-5 Series
- Extremely wide frequency range
- For floor-, wall-, corner- or ceiling-mount
- 600W continuous program high-power subwoofer system

Model	FB-120B/FB-120W
Power Handling Capacity	Continuous program: 600W
Rated Impedance	8Ω
Sensitivity (1W, 1m)	90 dB
Frequency Response	40 Hz – 1.2 kHz
Speaker Component	30cm (12") cone-type
Finish	Enclosure: Plywood, black or white Punched net: Surface-treated steel plate, white or black paint
Dimensions	408 (W) x 408 (H) x 450(D) mm (16.1" x 16.1" x 17.7")
Weight	15kg (33.1 lbs)
Option	Speaker rigging frame: HY-PF1B/W

Compact Array Speakers

HX-5 Series Optional Accessories

Rigging Frame
HY-PF1B

Ceiling Mount Bracket
HY-CW1B

Mount Bracket
HY-WM1B

Mount Bracket
HY-WM2B

Extension Bracket
HY-CN1B

Rigging Frame
HY-PF1W

Ceiling Mount Bracket
HY-CW1W

Mount Bracket
HY-WM1W

Mount Bracket
HY-WM2W

Extension Bracket
HY-CN1W

Rigging Frame
HY-PF1WP

Ceiling Mount Bracket
HY-CW1WP

Mount Bracket
HY-WM1WP

Mount Bracket
HY-WM2WP

Extension Bracket
HY-CN1B-WP

Speaker Stand Adapter
HY-ST1

Matching Transformer
MT-200

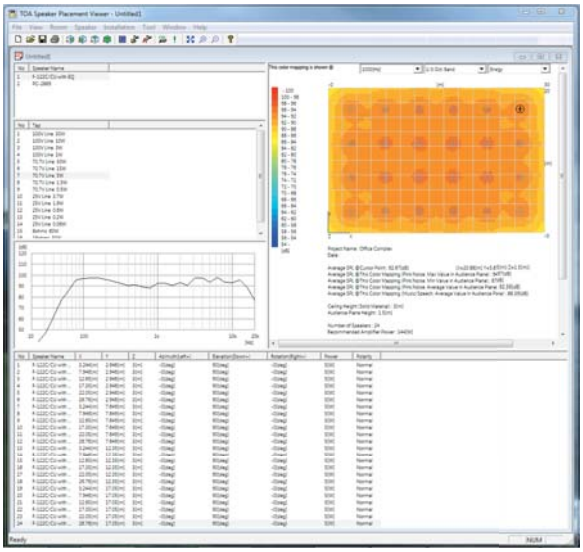
Extension Bracket
HY-CN1W-WP

Accessory Reference on page 109

TOA Speaker Software (SPV)

Free download at: www.TOAcanada.com! Design distributed ceiling or wall-mount speaker systems in minutes! The newest version of the TOA Speaker System Software is available with added features and more data files for all of your favorite TOA ceiling and wall-mount speakers. And, best of all, it's FREE!

- Easy to Use — design and layout systems in minutes!
- Automatic or Manual Layout Modes
- Color Display of Sound Pressure Level with adjustable resolution
- Interactive Frequency Response Display — changes in real-time as you move the mouse through the coverage area
- Updated Speaker Database includes most TOA models plus generic 4", 5" and 8" ceiling speakers
- Rectangular or Hexagonal Layout Patterns — Maximum Overlap, Minimum Overlap and Edge-to-Edge
- Adjust Individual Speakers — location, power and placement angles
- Minimum, Maximum and Average SPL Display for both pink noise and music/speech
- Selectable Frequency Centers — 1/12, 1/6, 1/3, 1, 2 and 4th octave
- Print Function includes color plots and speaker locations with Print Preview
- Recommended amplifier power calculation
- Energy or interference modes
- Normal or reverse polarity for individual speakers
- Metric or imperial units
- Zoom in/out and fit modes
- Distance between columns/rows



Compact Array Speakers

HX-7B
HX-7B-WP

HX-7W
HX-7W-WP

From a *whisper* to a SCREAM

- SYNC-Drive™ waveguide technology
- Innovative modular speaker design includes four preassembled modules with four LF drivers and twelve HF dome tweeters
- Adjustable dispersion angle to 0, 15, 30, 46 and 60 degrees
- Improved intelligibility through tailored coverage
- In-line driver arrangement for superior vertical coverage control
- Contoured waveguide-baffle for distortion-free coverage control
- High power handling; 750W continuous (250W pink noise)
- Splashproof versions (HX-7B-WP/HX-7W-WP)
- Parallel connectors - dual speakon and screw terminal
- A wide variety of optional mounting bracket are available

Model	HX-7B	HX-7W	HX-7B-WP	HX-7W-WP
Power Handling Capacity	Continuous program: 750W			
Rated Impedance	8Ω			
Sensitivity (1W, 1m)	100dB			
Frequency Response	75 Hz – 20 kHz		105Hz – 20 kHz	
Speaker Component	Low: 13cm (5.5”) cone-type x 8, High: Wave front control horn with compression driver x 4			
Directivity Angle	Horizontal: 100°; Vertical: 0°,15°,30°,45° and 60°			
Finish	Enclosure: Polypropylene, black or white; Punched net: Surface-treated steel plate, black or white, Hanging bracket: Steel plate, black or white paint		Enclosure: Polypropylene, black or white; Punched net: Surface-treated steel plate, black or white, rust proof coating	
Dimensions	497 (W) x 664 (H) x 274 (D) mm (19.6” x 26.1” x 10.8”)			
Weight	30kg (66.1 lbs)			
Dust/Water Protection	—		IPX4 (Install with every speaker module tilted downward from the horizontal.)	
Accessory	Hanging bracket L, R (L and R are symmetrical to each other) x 1 each, Hanging bracket mounting bolt x 4		Terminal cover x 1, Terminal cover mounting screw x 4, Rubber packing x 1	
Option	Matching transformer: MT-200[1], Matching transformer: HY-MT7 Speaker mounting bracket: HY-60DB/W, HY-CN7B/W, HY-PF7B/W, HY-VM7B/W, HY-WM7B/W[2], HY-CO801/W[2], Speaker stand adapter: HY-ST7		Matching transformer: MT-200[1], Matching transformer: HY-MT7 Speaker mounting bracket: HY-TM7B-WP, HY-MS7B-WP, HY-60DB-WP, HY-CN7B-WP	

Note: (1) When mounting the MT-200 Matching Transformer to the speaker, an optional HY-MT7 Matching Transformer adapter is required. (2) HY-VM7B Speaker Mounting Bracket is separately required.

Subwoofers

FB-150B

FB-150W

- Compact subwoofer, ideal for use with HX-7 Series (indoor use)
- 38 cm (15”) woofer
- For floor-, wall-, corner- or ceiling-mount
- 600W continuous program high-power subwoofer system

Model	FB-150B/FB-150W
Power Handling Capacity	Continuous program: 600W
Rated Impedance	8Ω
Sensitivity (1W, 1m)	93 dB
Frequency Response	40 – 400 Hz
Speaker Component	38cm (15”) cone-type
Finish	Enclosure: Plywood, black or white, urethane paint Punched net: Surface-treated steel plate, white or black paint
Dimensions	504 (W) x 528 (H) x 477 (D) mm (19.9” x 20.8” x 19.2”)
Weight	30kg (66.1 lbs)
Option	Speaker rigging frame: HY-PF7B/W

HX-7 Series Optional Accessories

Angle Adjustment Bar
HY-60DB-WP

Angle Adjustment Bar
HY-60DW-WP

Speaker Connection Bracket
HY-CN7B-WP

Speaker Connection Bracket
HY-CN7W-WP

Wall Mounting Bracket
HY-MS7BWP

Wall Mounting Bracket
HY-MS7WWP

Matching Transformer Adapter
HY-MT7

Rigging Frame
HY-PF7B

Rigging Frame
HY-PF7W

Speaker Stand Adapter
HY-ST7

Rigging Bracket
HY-TM7BWP

Rigging Bracket
HY-TM7WWP

Rigging Bracket
HY-VM7B

Rigging Bracket
HY-VM7W

Wall Mounting Bracket
HY-WM7B
(requires HY-VM7B)

Wall Mounting Bracket
HY-WM7W
(requires HY-VM7W)

Ceiling Mount Bracket
HY-C0801
(requires HY-VM7B)

Ceiling Mount Bracket
HY-C0801W
(requires HY-VM7W)

Accessory Reference on page 110

Coaxial Array Speakers

HS-1200BT
HS-1200WT
HS-1500BT
HS-1500WT

- For mobile or fixed installation e.g. in clubs banquet rooms or schools, etc.
- Can be used as a floor monitor
- 2-way unit system equipped with a large diameter woofer (12"/15") and array tweeter
- Twin input terminal connectors (Speakon and screw terminals)
- Well-controlled sound coverage: 90°horizontal x 40°vertical
- A model with a built-in matching transformer, for use in high impedance applications
- A wide variety of optional mounting bracket is available

Model	HS-1200BT/HS-1200WT	HS-1500BT/HS-1500WT
Power Handling Capacity	Continuous program: 300W (Low impedance)	
Sensitivity (1W, 1m)	97 dB	98dB
Rated Impedance	8Ω/100V line; 170Ω (60W), 330Ω (30W), 670Ω (15W) 70V line; 83Ω (60W), 170Ω (30W), 330Ω (15W), 670Ω (7.5W)	8Ω/100V line; 170Ω (60W), 330Ω (30W), 670Ω (15W) 70V line; 83Ω (60W), 170Ω (30W), 330Ω (15W), 670Ω (7.5W)
Frequency Response	70 Hz – 20 kHz	60 Hz – 20 kHz
Speaker Component	Low: 30cm (12") cone-type, High: Balanced dome tweeter x 6	Low: 38cm (15") cone-type, High: Balanced dome tweeter x 6
Finish	Enclosure: Polypropylene, black or white; Punched net: Surface-treated steel plate, black or white	
Dimensions	361 (W) x 448 (H) x 320 (D) mm (14.2" x 17.6" x 12.6")	451 (W) x 560 (H) x 400 (D) mm (17.8" x 22" x 15.7")
Weight	10kg (22 lbs)	14kg (30.9 lbs)
Accessory	Handle x 1, Handle fitting bracket x 2, Handle mounting screw x 2, Rubber foot x 2, Rubber foot mounting screw x 2	
Weight	Mounting bracket: HY-1200VB (vertical), HY-1200HB (Horizontal), Ceiling mount bracket: HY-C0801, Wall mounting bracket: HY-W0801	Mounting bracket: HY-1500VB (vertical), HY-1500HB (Horizontal), Ceiling mount bracket: HY-C0801, Wall mounting bracket: HY-W0801

HS Series Optional Brackets

For wall/ceiling
HY-1200HB

For wall/ceiling
HY-1200HW

For wall/ceiling
HY-1200VB

For wall/ceiling
HY-1200VW

For wall/ceiling
HY-1500HB

For wall/ceiling
HY-1500HW

For wall/ceiling
HY-1500VB

For wall/ceiling
HY-1500VW

For ceiling
HY-C0801*

For ceiling
HY-C0801W*

For wall
HY-W0801*

For wall
HY-W0801W*

*in combination with HY-1200/HY-1500 series brackets

Accessory Reference on page 109

Impedance Meter

Impedance Meter
ZM-104A

- Measures impedance of speaker lines up to 100k ohms
- Batteries: 4 (AA) (not included)
- Zero adjustment for accuracy on all ranges
- Easy to read meter calibrates directly in ohms
- Includes carrying case, test leads and impedance to power reference chart

Model	ZM-104A
Power Source	R6 x 4 (1.5 V DC x 4)
Current Consumption	39 mA
Reading	Direct reading meter, unit: Ω
Measurement Range	x 1 range: 5Ω - 1kΩ x 10 range: 50Ω - 10kΩ x 100 range: 500Ω - 100kΩ
Operating Temperature	-5 ºC to +40 ºC (23 ºF to 104 ºF)
Accuracy	±10%
Oscillation Frequency Battery life when continuously used	1 kHz, ±10% x 1 range: 30 H x 10 range: and 100 range: 60 h
Finish	ABS resin, black
Dimensions	120 (W) x 220 (H) x 63 (D) mm (4.72" x 8.66" x 2.48") (carrying case) 110 (W) x 180 (H) x 58 (D) mm (4.33" x 7.09" x 2.28") (unit only)
Weight	700g (1.54 lbs) (including carrying case, without batteries)

70 Volt Stepped Wall Attenuators

- Flush-mounted wall attenuators
- Volume can be adjusted in five steps
- Push-in terminals
- Accepts two conductors for easy bridging
- 2 wire connection for normal speaker line attenuation
- 3 wire connection for emergency paging attenuator override *(AT-063AP, ST-303AP, AT-603AP only)*

»Attenuator
AT-063AP[1]

»Attenuator
AT-303AP[1]

»Attenuator
AT-603AP[1]

Model	AT-063AP	AT-303AP	AT-603AP
Input Range	0.5 W - 6 W	0.5 W - 30 W	0.5 W - 60 W
Attenuation	5 steps (0 dB, -6 dB, -12 dB, -18 dB, OFF)		
Applicable Cable	600 V vinyl-insulated cable (indoor vinyl or Heat-resistant Indoor Vinyl cable); Solid cable: Ø0.8 (0.03") - Ø1.6 (0.06") mm		
Terminal	Push-in connector		
Finish	Knob, panel, plate: ABS resin, ivory; Case: ABS resin, black		
Dimensions	70 (W) x 120 (H) x 52.4 (D) mm (2.76" x 4.72" x 2.06") (with plate); 41 (W) x 108 (H) x 52.4 (D) mm (1.61" x 4.25" x 2.06") (attenuator only)		
Weight	170 g (0.37 lb) (unit only)	210 g (0.46 lb) (unit only)	
Accessory	Plate x1, Plate mounting screw x2, Box mounting screw x2		

»Attenuator
AT-025

»Attenuator
AT-100

»Attenuator
AT-100EMG[1]

»Attenuator
AT-10K

Model	AT-025	AT-100	AT-100EMG	AT-10K
Input Capacity	25 W	100 W		--
Attenuation	13 steps (0 dB, -3 dB, -6 dB, -12 dB, -15 dB, -18 dB, -21 dB, -24 dB, -27 dB, -30 dB, -33 dB, OFF)			Continuous 10 kΩ
Wire Capacity	14-gauge			
Priority Relay	--		24 VDC @ 15 mA	--
Finish	White plate and sub-plate; Decora-style			
Dimensions With plate:	69.9 (W) x 114.3 (H) mm (2.75" x 4.5")			
Attenuator only:	47.6 (W) x 63.5 (H) x 44.5 (D) mm (1.9" x 2.5" x 1.8")	47.6 (W) x 63.5 (H) x 46 (D) mm (1.9" x 2.5" x 1.8")	47.6 (W) x 63.5 (H) x 53.9 (D) mm (1.9" x 2.5" x 2.1")	25.4 (W) x 44.5 (H) x 31.8 (D) mm (1" x 1.8" x 1.3")

Notes: 1) Connection for emergency paging attenuator override.

Wall Plates

- Flush-mounted wall plates for MIC Connections
- YM-1J: 1/4" female TRS jack, single gang wall plate with cover.
- YM-3CF: XLR female jack, single gang wall plate with cover.

»MIC Connector
YM-1J

»MIC Connector
YM-3CF

Model	YM-1J	YM-3CF
Jack	Double pole jack	XLM-3-31PCH-R
Usable Cable	Microphone vinyl cable with sectional area of 0.75 - 2.0 mm²	
Usable Plate	YP-1AF	
Usable Plug	Single or double pole plug	XLR-3-12C
Finish	Cover: ABS resin (ivory), Frame: Steel plate (t1.2)	
Dimensions	45 (W) x 110 (H) x 48.1 (D) mm (1.77" x 4.33" x 1.89")	45 (W) x 110 (H) x 53 (D) mm (1.77" x 4.33" x 2.1")
Weight	750 g (1.65 lb)	95 g (0.21 lb)
Accessory	Screw M4 x 35 x 2	

Notes: YM-1J/3CF: When routing a power or speaker line and microphone line through the same electric box, provide a barrier between the two for insulation. For cables with sectional area of under 0.75 mm², fold back their cores to increase the sectional area before making a connection.
YM-1J: H (hot), C (Cold), and E (ground) are shorted. Therefore, mixers or amplifiers using phantom power cannot be used.

cUL Safety Certified Models

- Note -
- All TOA Canada Corporation products requiring AC power are cUL Safety Certified.

Model	UL 2043	ULC S541S	UL 1480 UUMW/UEAY	CAN/CSA C22.2 No. 205 UEAY7	UL60065
BS-680U		Yes	Yes		
CS-64U, CS-154U, CS-304U			Yes		
F-122CU2, F-2322C, F-2352CU2, F-2852CU2	Yes		Yes	Yes	
IR-820SP	Yes				Yes
PC-580RU, PC-580RVU	Yes[1]	Yes[1]	Yes[1]		
PE-304BU, PE-304WU, PE-604BU, PE-604WU		Yes	Yes		
SC-630TU		Yes	Yes		

Note: [1]When used with HY-BC580U

Conference System

Infrared Conference System TS-800/TS-910 Series

- For efficient communications in each kind of conference
- System with voting function, second channel audio, wired stations plus IR stations (TS-910) or standard system (TS-800)
- Safe and secure infrared wireless technology
- Compact and lightweight chairman and delegate units
- Up to 192 active units (wired and/or IR) (TS-910) or 64 active units (TS-800) per system
- No cabling for Infrared system makes installation easy
- Chairman unit features a priority speech key
- Speaker restriction function
- Auto Mic-Off function
- Installation status checkup function

TS-910 Series System Example

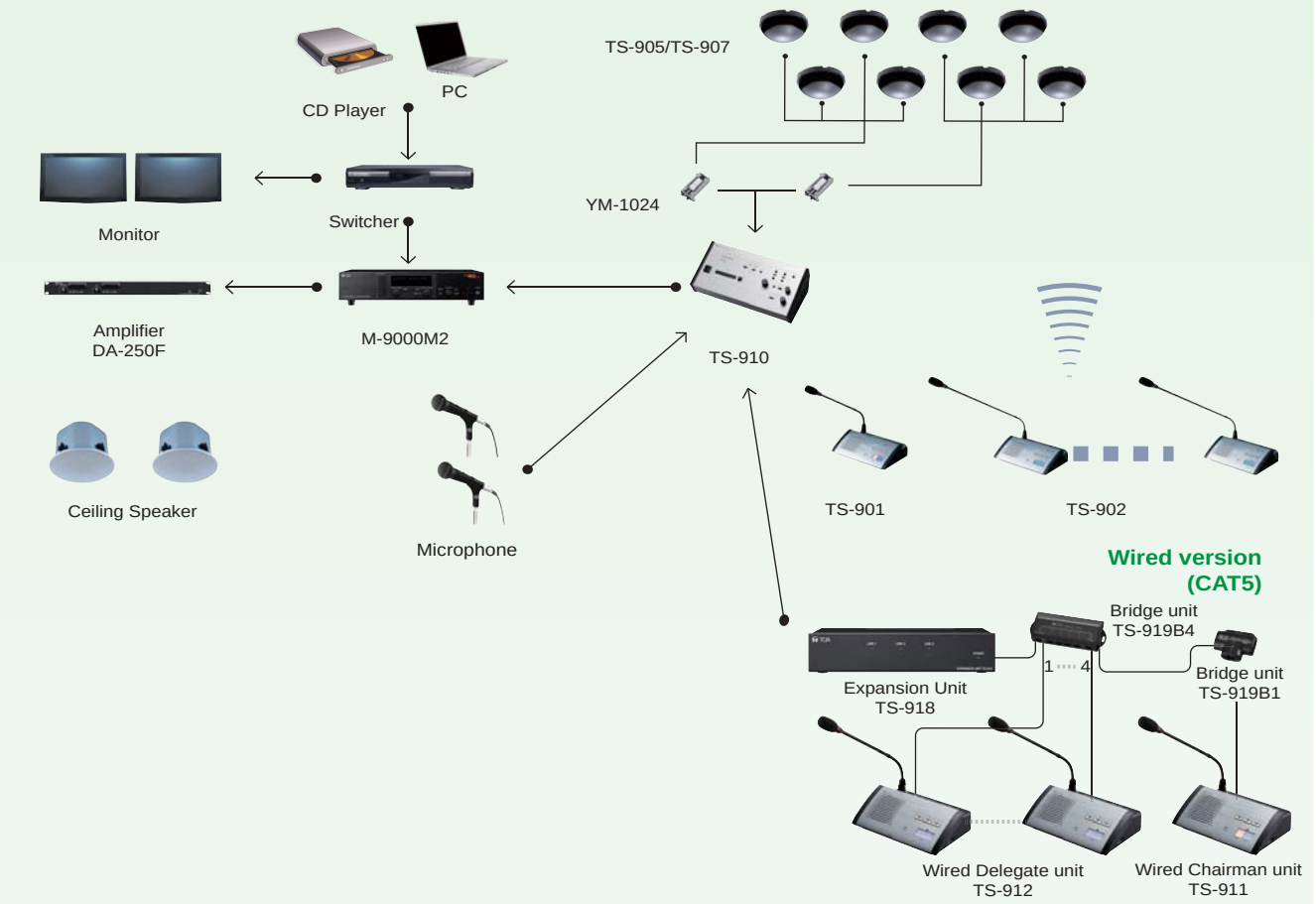
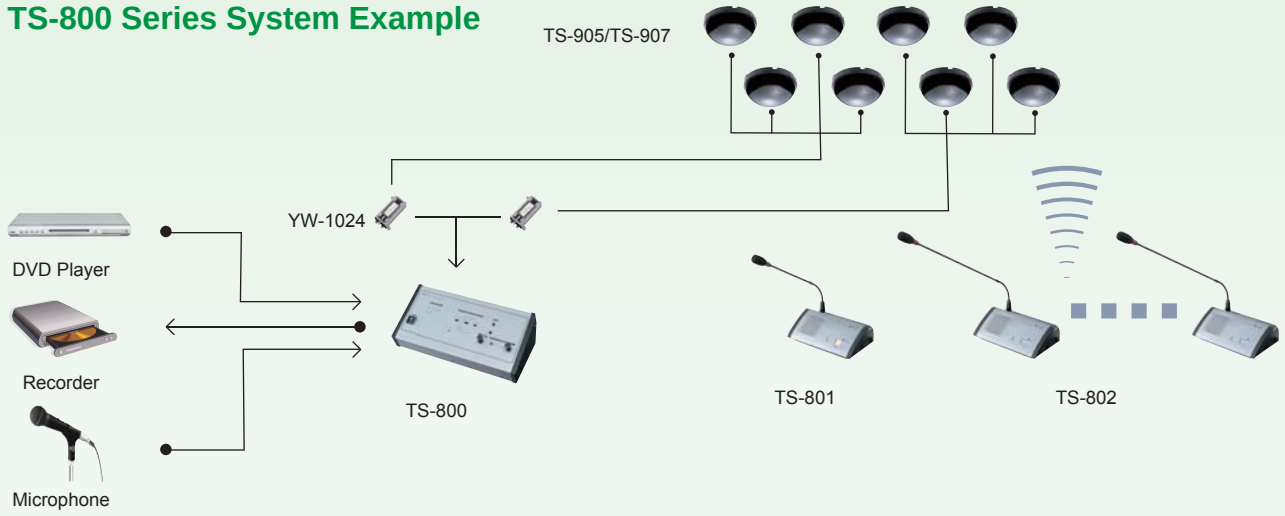


Image Drawing

Infrared Conference System TS-800/TS-910 Series

TS-800 Series System Example



Central Unit
TS-910

- Use with Wired and IR units (combine)
- 2 channels for 2 languages
- For bilingual conferences and voting with triple choice vote function
- Up to 192 wired and/or IR units per system
- Built in feedback suppressor for reduction of acoustic feedback

Central Unit
TS-800

- Up to 64 active units per system
- Audio input from a wired microphone or other sound source
- 1 line and 1 recording output

Model	TS-910 UL	TS-800 UL
Input	MIC 1 (Base language): -60 dB*, 600 Ω, unbalanced, ø6.3 mm phone jack (2P) MIC 2 (Translation language): -60 dB*, 600 Ω, unbalanced, ø6.3 mm phone jack (2P) AUX 1 (Base language): -20 dB*, 10 kΩ, unbalanced, ø6.3 mm phone jack (2P) AUX 2 (Translation language): -20 dB*, 10 kΩ, unbalanced, ø6.3 mm phone jack (2P) AUX 3 (Base and Translation language): -20 dB*, 10 kΩ, unbalanced, ø6.3 mm phone jack (2P)	MIC: -60 dB*, 600 Ω, unbalanced, phone jack AUX: -20 dB*, 10 kΩ, unbalanced, phone jack
Output	LINE: -20 dB*, 10 kΩ, unbalanced, ø6.3 mm phone jack (2P) REC: -20 dB*, 10 kΩ, unbalanced, ø6.3 mm phone jack (2P), RCA pin jack HEADPHONES: ø3.5 mm Mini jack (3P: monaural)	REC: -20 dB*, 10 kΩ, unbalanced, phone jack (2P), RCA pin jack HEADPHONES: Mini jack
External EQ	Input: -20 dB*, 10 kΩ, unbalanced, RCA pin jack Output: -20 dB*, 10 kΩ, unbalanced, RCA pin jack	--
No. of Connectable Chairman/Delegate Unit	192 units	64 units
External Control Terminal	D-sub connector (9P, male)/USB-B selectable	D-sub connector (9P, male)
Function Switch	Simultaneous speaker No. setting switch: 1/2/3/4 Mic-off setting switch: TIME OUT ON/OFF Speech priority selector switch: A/B/C (A: FIFO; B: LIFO; C: Fixed for the first unit, and LIFO for the subsequent units) FBS selector switch: External equalizer/OFF/FBS AUTO/FBS MANUAL	Simultaneous speaker No. setting switch: 1/2/4 Mic-off setting switch: TIME OUT ON/OFF Speech priority selector switch: A/B/C (A: FIFO; B: LIFO; C: Fixed for the first unit, and LIFO for the subsequent units) FBS selector switch: External equalizer/OFF/FBS AUTO/FBS MANUAL
Applicable Unit	TS-901/902/911/912; TS-801/802/811/812	TS-801/802
Weight	2.8kg (6.17 lbs)	2.7kg (6 lbs)
Accessory	AC adapter (cord length: 1.8 m (5.91 ft) DC cord, and 2 m (6.56 ft) detachable AC cord) x1	
Option	Rack mounting bracket: MB-TS900	

Chairman Unit
TS-901

Delegate Unit
TS-902

- 3 voting keys
- Channel selector for conference language
- To prevent feedback, the built-in speaker is turned off while the microphone is on
- 2 headphone jacks

Chairman Unit
TS-801

Delegate Unit
TS-802

- 2 different versions for chairman and delegates
- To prevent feedback, the built-in speaker is turned off while the microphone is on
- 2 headphone jacks

Infrared Conference System TS-800/TS-910 Series

Model	TS-901	TS-902	TS-801	TS-802
Power Source	7.4 V DC (battery), 9 V DC (AC adapter) (supplied from BP-900 battery (option) or AD-0910 AC adapter (option))			
Input	Microphone terminal: Combined type of XLR-4-31 (dedicated for connecting the optional TS-903 or TS-904)			
Output	Monitor speaker: 8 Ω, 0.2 W; Headphone: Mini jack x 2			
Battery Life	Approx. 10 hours (when the fully-charged BP-900 battery is used with "During speech" to Standby" ratio of 1:2)			
Function	Monitor speaker volume Headphone volume Priority speech function Voting function Monitor selector switch	Monitor speaker volume Headphone volume Voting function Monitor selector switch	Monitor speaker volume Headphone volume Priority speech function	Monitor speaker volume Headphone volume
Dimensions	210 (W) x 65.9 (H) x 152 (D) mm (8.3" x 2.6" x 6")			
Weight	640g (1.41 lbs)		630g (1.39 lbs)	
Option	Microphone: TS-903, TS-904; Lithium-ion battery: BP-900; AC adapter: AD-0910			

»Chairman Unit
TS-911

»Delegate Unit
TS-912

»Chairman Unit
TS-811

»Delegate Unit
TS-812

(Images shown with TS-903 optional microphone)

- Voting function (TS-911 and TS-912 only)
- Connected to conference system by a cable
- Priority switch allows speech to take precedence over Delegate unit
- Connects directly to TS-919B1 or TS-919B4 bridge unit, then to the TS-910 Central unit via the TS-918 Expansion unit
- Select either TS-903 or TS-904 optional microphone

Model	TS-911	TS-912	TS-811	TS-812
Power Source	24 V DC (supplied from the TS-918 Expansion Unit (option))			
Modulation Method	Frequency Modulation			
Carrier Frequency	Transmission: Audio channel 1: 7.35 MHz; Audio channel 2: 8.10 MHz; Audio channel 3: 8.55 MHz; Audio channel 4: 9.15 MHz; Control channel: 6.45 MHz Reception: Base language channel: 1.95 MHz; Translation language channel: 2.25 MHz			
Input	Microphone terminal: Combined type of XLR-4-31 (dedicated for connecting the optional TS-903 or TS-904)			
Output	Monitor speaker: 8 Ω, 0.2 W; Headphone: ø3.5 mm mini jack (3P: monaural) x 2			
Connection Terminal	RJ45 connector			
LED Indicator	Speech indicator (flashes at communication failure), Voting status indicators 1-3, Power indicator (flashes at communication failure)		Speech indicator (flashes at communication failure), Power indicator (flashes at communication failure)	
Function	Monitor volume control Headphone volume control Priority speech function Voting function Monitor selector switch (MAIN/SUB)	Monitor volume control Headphone volume control Voting function Monitor selector switch (MAIN/SUB)	Monitor volume control Headphone volume control Priority speech function	Monitor volume control Headphone volume control
Dimensions	210 (W) x 68.6 (H) x 152 (D) mm (8.3" x 2.7" x 6")			
Weight	570g (1.26 lbs)			
Option	Microphone: TS-903, TS-904			

»Chairperson and Delegate Station Microphone
TS-903, TS-904

- For TS-801, TS-802, TS-901, TS-902
- TS-903 - Standard Gooseneck Microphone (14.5")
- TS-904 - Long Gooseneck Microphone (20.4")
- Electret condenser microphone element
- Distinctive red LED "in-use" indicator also flashes to show low battery status

Model	TS-903	TS-904
Type	Electret condenser microphone	
Directivity	Unidirectional	
Rated Impedance	1.8 kΩ	
Rated Sensitivity	-37 dB (1 kHz 0 dB = 1 V/Pa)	
LED Indicator	Speech indicator (ring type)	
Frequency Response	100 - 13,000 Hz	
Output Connector	Combined type of XLR-4-32	
Finish	Gooseneck: Stainless steel, black; Other: ABS resin, black	
Weight	90g (0.2 lbs)	105g (0.23 lbs)
Applicable Unit (Option)	Chairman/Delegate units: TS-801, TS-802, TS-901, TS-902	

»Infrared Transceiver
TS-905, TS-907

- Installs in ceiling or wall
- TS-905: up to 16 ft ceiling height
- TS-907: 16 to 23 ft. ceiling height
- Connect up to sixteen TS-905 or twelve TS-907 using optional Antenna Distributors: YW-1022Y (1x2) or YW-1024Y (1x4)
- Coaxial cable with BNC connectors (supplied by others)

Model		TS-905	TS-907
Power Source		24 V DC (supplied from the optional TS-900 or TS-800)	
Infrared Emitter/Detector	Wavelength	870 nm (AM: Brightness modulation)	
	Modulation Method	Frequency modulation	
	Carrier Frequency	Transmission: Audio channel 1: 7.35 MHz Audio channel 2: 8.10 MHz Audio channel 3: 8.55 MHz Audio channel 4: 9.15 MHz Control channel: 6.45 MHz Reception: Base language channel: 1.95 MHz Translation language channel: 2.25 MHz	
	Acceptance/Emission Angle	Vertical: 150° (75° + 75°) Horizontal: 360°	Vertical: 90° (45° + 45°) Horizontal: 360°
	Communication Area	Approx. 6-7m in radius from the point underneath the unit (Ceiling height: 2.5 - 4.5 m)	Approx. 6m in radius from the point underneath the unit (Ceiling height: 5-7 m)
Connection Terminal		BNC jack	
LED Indicator		Power	
Finish		Dome: PC resin, visible light cut filter; Base: ABS resin, black	
Dimensions		ø120 x 71.3 (H) mm (ø4.72" x 2.8")	
Accessory		Mounting bracket x 1, Stand mounting bracket x1, Stand mounting bracket attaching screw x 3, Thread adapter (U5/16 - NS5/8) x1	
Option		Microphone stand (the mounting thread size must be U5/16 or NS5/8)	

Infrared Conference System TS-800/TS-910 Series

TS-800/910 Series Optional Accessories

Microphone
TS-903

Microphone
TS-904

Rechargeable Lithium-Ion Battery
BP-900

Battery Charger
BC-900

AC Adapter
AD-0910

Infrared Transmitter/ Receiver
TS-905

Infrared Transmitter/ Receiver
TS-907

Distributor
YW-1022

Distributor
YW-1024

Rack Mount Bracket
MB-TS900

Bridge Unit
TS-919 B1

Bridge Unit
TS-919 B4

Expansion Unit
TS-918

Accessory Reference on page 102

TS-800/910 Series Software

- Configure, control, manage and personalize/customize each conference
- Assign unit ID's and member names
- Conference equipment set-up and configuration
- Conference Main Display controls and monitors meeting functions, including;start/end conference, voting and speech timer, monitor attendance and unit status (connection status, speaking, chairman priority, battery alarm)
- Record (with an external recording device) and access the conference speech and voting for later reference/review
- Conference configuration: edit and save conference settings,including; volume settings, voting settings, count down timer function, etc.
- Dual monitor viewing options (computer monitor and/or projector), allows display of voting results
- ***Software disk available by request only. Please contact TOA's Technical Support Department for more information.***

Voting Function

Control and assign voting functions including;

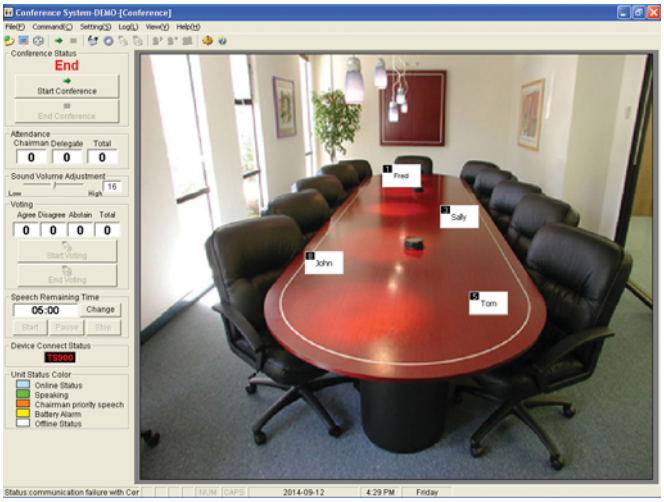
- Naming the vote
- Start and end voting
- Record logs of the vote
- Change voting options (i.e. agree, disagree, abstain)
- Option to log/record voting details, including; date/time, conference name, vote name, content and voting results (printable logs)

Speech Function:

Control and assign speech functions including;

- Speech mode (FIFO, LIFO, 1 fixed + LIFO)
- Assign the number of speakers at one time
- Auto microphone-off after 30 seconds of inactivity
- Speech (count-down) timers
- Record conference: speech log,9 including; date/time, speaker, content, and length of speech/conference

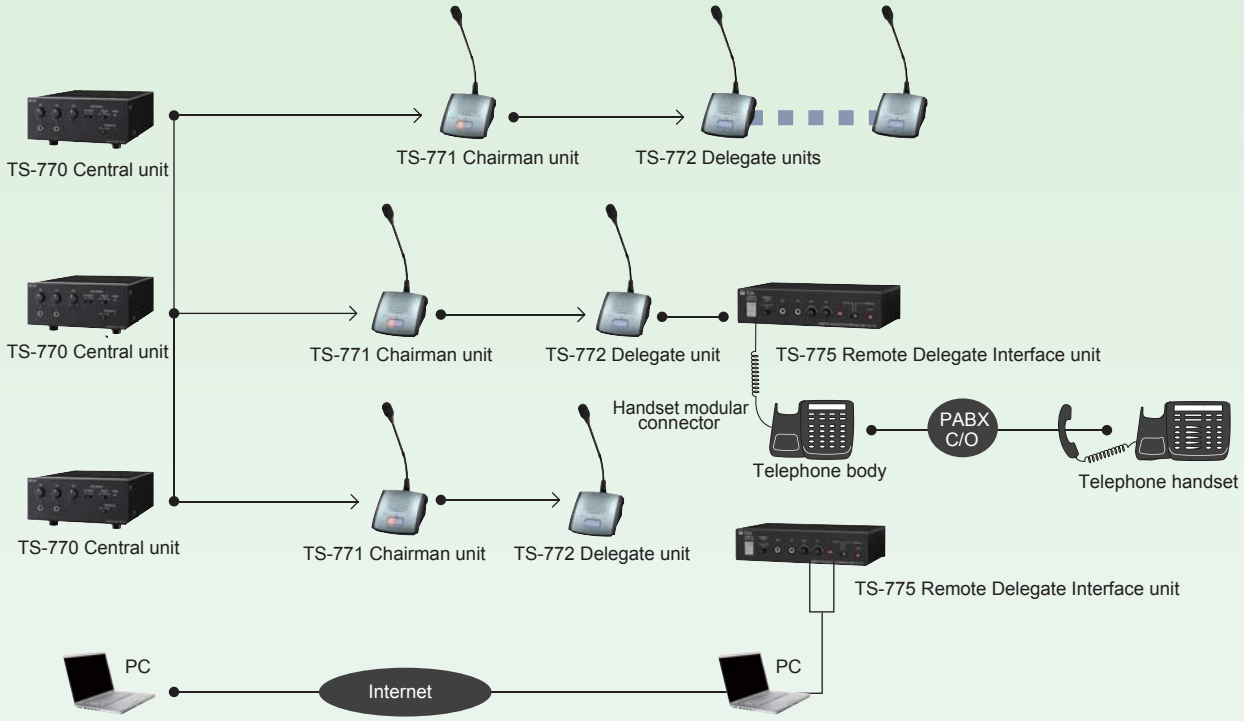
- ***Software disk available by request only. Please contact TOA's Technical Support Department for more information. technicalsupport@toacanada.com***



Wired Conference System TS-770 Series

- Maximum 70 Chairman and Delegate Units (up to 35 units* per line) are connectable to one Central Unit
  *If the TS-775 Remote Delegate Interface Unit is used, up to 35 TS-775 Remote Delegate Interface Units can be connected per line also
- Expandable to maximum 210 units by connecting 2 additional Central Units
- Equipped with an All-Mic-On function that simultaneously turns on all microphones for sound collecting and recording of all units
- Remote conferencing is possible, enabling people at a remote location to participate in the conference
- The Test Function feature enables easy checking of the connection status of all connected units
- Number of simultaneously usable delegate units can be selected
- Automatic Mic-Off function (TIME OUT)

TS-770 Series System Example



»Central Unit

TS-770

- Supplies DC Power to all units, with lamp indicator
- Jack for microphone input, and AUX input
- Microphone, AUX, line (for conference unit's built-in speaker) and chime(on chairman's unit) volume controls
- Equalizer input
- Recording output

Model	TS-770
Power Source	120 V AC, 50/60 Hz
Power Consumption	Max. 60 W
Rated Output	35 V DC, 650 mA x 2
Input	MIC: -60 dB*, 600 Ω, unbalanced phone jack AUX: -20 dB*, 10 kΩ, unbalanced, phone jack
Output	Recording: -20 dB*, 10 kΩ, unbalanced, phone jack, pin jack x 2
Equalizer Insertion Input Terminal	Input: -20 dB*, 10 kΩ, pin jack Output: -20 dB*, 10 kΩ, pin jack
Expansion Input and Output Terminal	Input: -20 dB*, 10 kΩ, pin jack x2 Output: -20 dB*, 10 kΩ, pin jack x 2 Control: 10 kΩ, or more, voltage output, pin jack x 2
Control	Priority speech chime: Operation of TS-771's priority button activates a single-tone chime Speaker restriction: Number of simultaneously-usable TS-772 and TS-775 can be set to 1, 3, or 6 Automatic Mic-off: Function OFF/20 s/40 s (selectable)
Number of Connectable Conference units	70 (Max. 35 units per line) Max. 210 (when 3 expansion amplifiers used)
Finish	Panel: Aluminum, hairline, black Case: Pre-coated steel plate, black 30% gloss
Dimensions	210 (W) x 107.1 (H) x 316 (D) mm (8.27" x 4.22" x 12.44")
Weight	4 kg (8.82 lb)
Accessory	Power cord (2 m (6.56 ft)) x 1
Option	Extension cord: YR-770-2M, YR-770-10M

*0 dB = 1 V

Wired Conference System TS-770 Series

Chairman Unit
TS-771

Delegate Unit
TS-772

- To prevent feedback, the built-in speaker is turned off while the microphone is on
- Press-to-talk priority speech button activates chime and overrides delegate unit (TS-771 only)
- Headphone/recording output

Model	TS-771	TS-772
Power Source	35 V DC, under 30 mA (supplied from Central Unit)	
Output	Headphone/Recording: 32 Ω,(headphone)/10 kΩ, -20 dB* (recording), unbalanced, mini jack (with VR) Internal speaker: 130 Ω, 200 mW Contact output: 24 V DC, Max 50 mA	
Control	Speech button: Microphone, speaker on-off control by speech switch Priority button: Microphone, speaker on-off, other microphone cutoff, and single-tone chime activation	Microphone, speaker on-off control by speech switch
Finish	Case: ABS resin, black Panel: ABS resin, gray metallic, semi-gloss, paint	
Dimensions	114.5 (W) x 78.4 (H) x 152.9 (D) mm (4.51" x 3.09" x 6.02")	
Weight	780 g (1.72 lb)	
Option	Microphone: TS-773 (standard); TS-774 (long)	

Remote Delegate Interface Unit
TS-775

- For connection of external delegates via telephone, IP telephone (up to 70 PCs per TS-770) and mobile phone
- Line input for other conference units
- Speech method selectable
  Auto: Voice-activated automatic switching
  Manual: Talk-key activated

Model	TS-775
Power Source	35 V DC, under 30 mA (supplied from Central Unit)
Input	-60 dB*, 200 Ω, balanced, mini phone jack with VR control
Output	-60 dB*, 22 Ω, balanced, mini phone jack with VR control
Speech Mode	AUTO: Voice activated Automatic switching MANUAL: Talk key on-off switching
Finish	Pre-coated steel plate, black
Dimensions	160 (W) x 41.8 (H) x 100 (D) mm (6.3" x 1.65" x 3.94") (excluding projection)
Weight	700 g (1.54 lb)

*0dB = 1 V

Microphone
TS-773
TS-774

- Unidirectional - Electret condenser microphone
- Red LED ring light active speech indicator
- TS-773: 14.49" Long
- TS-774: 20.39" Long
- Use with TS-771 or TS-772

Model	TS-773	TS-774
Type	Electret condenser microphone	
Directivity	Unidirectional	
Rated Impedance	1.8 kΩ	
Rated Sensitivity	-37 dB (1 kHz 0 dB = 1 V/Pa)	
LED Indicator	Speech indicator (ring type)	
Frequency Response	100 - 13,000 Hz	
Output Connector	Combined type of XLR-4-32	
Finish	Gooseneck: Stainless steel, black; Other: ABS resin, black	
Weight	90g (0.2 lbs)	105g (0.23 lbs)
Applicable Unit (Option)	Chairman unit: TS-771; Delegate unit: TS-772	

TS-770 Series Optional Accessories

Microphone
TS-773

Microphone
TS-774

Extension Cord
YR-770-2M

Extension Cord
YR-770-10M

Accessory Reference on page 102

Megaphones

- Anti-bacterial treatment for all models (mouth/microphone and handle)
- High durability ABS or ASA resin construction
- Wide frequency range for enhanced audio quality
- Polyimide speaker diaphragms
- Wireless Function (ER-2930W only)
- Long-lasting battery life
- Compact and lightweight
- Neodymium magnets for high audio performance
- Extended audible range

Splashproof Hand Grip Type Megaphones

ER-1203
- 4W max.
- IPX5*

ER-1206
- 10W max.
- IPX5*

ER-1206W
- 10W max.
- IPX5*
- with whistle

ER-1206S
- 10W max.
- IPX5*
- with siren

*Protected against water jets by a nozzle against the enclosure from any direction.

Hand Grip Type Megaphones

ER-520
- 10W max.

ER-520W
- 10W max.
- with whistle

ER-520S
- 10W max.
- with siren

ER-1215
- 23W max.

ER-1215S
- 23W max.
- with siren

ER-3215
- 23W max.

Shoulder Type Megaphones

ER-2215
- 23W max.

ER-2215W
- 23W max.
- with whistle

ER-2230W
- 45W max.
- with whistle

ER-2930W
- 45W max.
- with whistle and wireless option

Hands-Free Type Megaphones

»» Compact Power Megaphone

ER-604W

- Compact and lightweight body
- Maximum output power of 10 W
- Supplied hand-held type microphone equipped with press-to-talk switch and volume control
- Built-in electronic whistle
- 2 mic inputs and 1 aux input
- Battery status indicator
- Approx. 10 hours of operation with 8 R6P manganese dioxide batteries (without use of whistle)
- Optional headset microphone: WH-4000H

»» Personal PA System

ER-1000

- Ideal for school teachers, sports instructors, tour guides, trade show personnel, and police officers, all of whom can benefit from the system's hands free convenience
- Ultra-light body of only about 480 g, yet with a maximum output of 10W and a maximum audible range of 80 meters
- Supplied headset microphone
- 80 cm long elastic waist belt extendable to up to 120 cm
- A 30 cm extension belt is included.
- Large rotating volume control and the independent power on/off switch for easy knob and switch operation even with a gloved hand
- AUX input terminal
- 8 hours operation with 6 alkaline AA batteries

Accessory Reference on page 103

Megaphones

Model	ER-1203	ER-1206	ER-1206W	ER-1206S
Power Source	R6P (AA) x 4 (6 V DC)	R6P (AA) x 6 (6 V DC) or R6P (AA) x 4 (6 V DC)		
Rated Output	3 W	6 W (when using 6 R6P batteries)		
Maximum Output	4 W	10 W (when using 6 R6P batteries)		
Battery Life	Approx. 8 hours (JEITA)[1]	When using 6 R6P batteries: Approx. 8 hours (JEITA)[1] When using 4 R6P batteries[2]: Approx. 5 hours (JEITA)[1]	When using 6 R6P batteries: (JEITA)[1] Voice: Approx. 8 hours, Whistle: Approx. 20 minutes When using 4 R6P batteries[2]: (JEITA)[1] Voice: Approx. 5 hours, Whistle: Approx. 10 minutes	When using 6 R6P batteries: (JEITA)[1] Voice: Approx. 8 hours, Siren: Approx. 20 minutes When using 4 R6P batteries[2]: (JEITA)[1] Voice: Approx. 5 hours, Siren: Approx. 10 minutes
Audible Range	Approx. 125 m (JEITA)[1]	Approx. 250 m (JEITA)[1]	Approx. 250 m (JEITA)[1] Whistle: Approx. 315 m (JEITA)[1]	Approx. 250 m (JEITA)[1] Siren: Approx. 315 m (JEITA)[1]
Signal Sound	--		Whistle	Siren (sounds at 5 second intervals)
Magnetic Circuit	Neodymium magnet, inner magnet type			
Diaphragm	Polyimide film (voice coil, bobbin)			
Water Protection	IPX5			
Finish Horn: Other: Strap:	ASA resin, clear dark gray ASA resin, dark gray Nylon, black		ASA resin, clear dark gray ASA resin, yellow Nylon, black	ASA resin, clear red ASA resin, red Nylon, black
Dimensions	137 (W) x 257.8 (H) x 210 (D) mm (5.4" x 10.2" x 8.3")	154 (W) x 266 (H) x 250 (D) mm (6.1" x 10.5" x 9.8")		
Weight	610 g (1.34 lb) (without batteries)	660 g (1.45 lb) (without batteries)		680 g (1.49 lb) (without batteries)
Accessory	--	Battery spacer x 1		
Option	Wall mounting bracket for megaphone: SP-1100			

[1] JEITA: Japan electronics and information technology industries association. (EIAJ TT-4501A)
[2] With the additional use of the supplied spacer.
Note: Batteries are optional.

Model	ER-520	ER-520W	ER-520S	ER-1215	ER-1215S
Power Source	R6P (AA) x 8 (12 V DC)			R14P (C) x 6 (9 V DC)	
Rated Output	6 W			15 W	
Maximum Output	10 W			23 W	
Battery Life	Approx. 10 hours (JEITA)[1]	Voice: Approx. 10 hours (JEITA)[1] Whistle: Approx. 30 minutes (JEITA)[1]	Voice: Approx. 10 hours (JEITA)[1] Siren: Approx. 40 minutes (JEITA)[1]	Approx. 14 hours (JEITA)[1]	Voice: Approx. 14 hours (JEITA)[1] Whistle: Approx. 20 minutes (JEITA)[1]
Audible Range	Approx. 250 m (JEITA)[1]	Voice: Approx. 250 m (JEITA)[1] Whistle: Approx. 315 m (JEITA)[1]		Approx. 315 m (JEITA)[1]	Voice: Approx. 315 m (JEITA)[1] Whistle: Approx. 500 m (JEITA)[1]
Signal Sound	--	Whistle	Siren	--	Siren (sounds at 5 second intervals)
Diaphragm	Polyimide film			Polyimide film (voice coil, bobbin)	
Finish Horn: Other: Strap:	ASA resin, light gray ASA resin, gray Tetoron, black		ASA resin, red ASA resin, red Tetoron, black	ASA resin, light gray ASA resin, gray Nylon, black	ASA resin, red ASA resin, red Nylon, black
Dimensions	160 (W) x 256 (H) x 260 (D) mm (6.3" x 10.1" x 10.2")			210 (W) x 291 (H) x 346 (D) mm (8.27" x 11.5" x 13.6")	
Weight *(without batteries)*	620 g (1.37 lb)	650 g (1.43 lb)		1.1 kg (2.43 lb)	1.2 kg (2.65 lb)

[1] JEITA: Japan electronics and information technology industries association. (EIAJ TT-4501A)
[2] With the additional use of the supplied spacer.
Note: Batteries are optional.

Model	ER-3215	ER-2215	ER-2215W	ER-2230W	ER-2930W
Power Source	R14P (C) x 6 (9 V DC)			Battery: R20P (D) x 10 (15 V DC); External Power: 12 V DC Battery	
Rated Output	15 W			30 W	
Maximum Output	23 W			45 W	
Battery Life	Approx. 9 hours (JEITA)[1]	Approx. 9 hours (JEITA)[1]	Voice: Approx. 9 hours (JEITA)[1] Siren: Approx. 20 minutes (JEITA)[1]	Voice: Approx. 17 hours (JEITA)[1] Whistle: Approx. 90 minutes (JEITA)[1]	
Audible Range	Approx. 400 m (JEITA)[1]		Voice: Approx. 400 m (JEITA)[1] Whistle: Approx. 500 m (JEITA)[1]	Voice: Approx. 800 m (JEITA)[1] Whistle: Approx. 1000m (JEITA)[1]	
Signal Sound	--		Whistle (1.6 to 2.4 kHz)	Whistle (1.6 to 2.4 kHz)	
Diaphragm	Polyimide film (voice coil, bobbin)				
Remaining Battery Indication	--			LED (also serves as a power indicator) Steady ON: Normal use, Flashing: Batteries need replacement	
AUX Input Sensitivity	--			-10 dB* (300 mV), 10 kΩ, (ø6.3 mini jack, stereo plug acceptable), volume control	
EXT. Mic Input	--			600 Ω, unbalanced, ø6.3 phone jack, volume control	
Receiving Frequency	--				UHF (800 MHz Band) VHF (200 MHz band)
Antenna	--				Fold-down flexible antenna
Finish Horn: Other: Strap: Horn Ring: Case Top:	ASA resin, light gray ASA resin, gray Nylon, black -- --			Aluminum, light gray, paint ASA resin, gray Nylon, black Vinyl chloride, gray Die-cast aluminum, gray paint	
Dimensions	210(W) x 291(H) x 381(D)mm (8.27" x 11.5" x 15.0")	ø210 x 336 mm (8.27" x1 3.2")		ø351 x 512 mm (13.819" x 20.16")	
Weight *(without batteries)*	Body: 1.15 kg (2.5 lb) Microphone: 150 g (0.33 lb)		Body: 1.2 kg (2.6 lb) Microphone: 150 g (0.33 lb)	3.6 kg (7.9 lb)	3.8 kg (8.4 lb)
Accessory	--			ø3.5 mini plug (AUX input) x1, External power supply cord (1 m) x1, Splash-proof cover x1[3]	
Option	--			Microphone: DM-1300US	Microphone: DM-1300US Wireless Tuner/Receiver Module: WTU-4800

* 0 dB = 1 V
[1] JEITA: Japan electronics and information technology industries association. (EIAJ TT-4501A)
[2] With the additional use of the supplied spacer.
[3] Do not use the unit in heavy rains, strong winds or in locations where the unit is directly exposed to water, even when using the supplied splash-proof cover.
Note: Batteries are optional.

Megaphones Optional Accessories

Wall Mount Bracket
SP-1100

Headset Microphone
WH-4000H *(for ER-604W)*

Accessory Reference on page 103

N-8000 Series Station Selection Chart

		Desk-top	Optional Bracket	Wall-mount	Applicable Exchanges/ Interfaces
IP Base	Master/Door Stations	WB-200RM N-8610RM YC-280 N-8600MS YC-280 N-8510MS		N-8640DS N-8640SB N-8650DS	
2-Wire Type	Master/Door Stations	YC-280 N-8000MS YC-280 N-8010MS YC-290 N-8011MS YC-280 N-8020MS		N-8050DS N-8031MS N-8033MS N-8050SB N-8031SB	N-8000EX N-8010EX
2-core Shielded Type	RS Sub-stations			RS-150 RS-140 RS-142 RS-144 RS-143 Vandal-resistant type Outdoor type RS-160 RS-170 RS-180	N-8000RS N-8010RS
4-wire Type	RS Sub-stations	YC-280 N-8410MS		RS-450 RS-442 RS-460 RS-470 RS-480	N-8400RS

IP Network Intercom

The N-8000 Series IP Network Intercom Series offers flexible communications for up to 3,072 stations on existing corporate local and wide area data networks. It is a network-compatible intercom system using packet audio technology. Built on TOA's proven NX-100 network audio technology, the IP Intercom products occupy minimal network bandwidth (130 kbps maximum) for station-to-station calls and can be controlled and monitored through software or web browser. Programmable system functions include 192 paging zones, time-based call forwarding and scan monitoring. Monitoring can be real-time over the internet as the system is not server based. System frequency response extends to 7 kHz, allowing even PA-delivered announcements to be extremely clear and easily intelligible. Communications can be selected by the user as needed -- the "Master-to-Master" system optimized for full duplex conversation at such venues as factories and hospitals, or the "Master-to-Sub" (half duplex) system which is particularly suited for schools, prisons, and similar locations.

N-8000 Series IP Base Station

IP Multifunctional Master Station

N-8600MS

- System Allows Full-duplex conversation in Hands-free mode with new stations
- External mic and headset connections for hands free operation
- LCD, speed-dial, Power-over-Ethernet

IP Standard Master Station

N-8510MS

- Handset duplex communication
- Connects directly to network (10/100Base TX)
- Occupies one network node (192 max)
- Two RJ-45 network connectors (one for network, one for PC)
- Contact input terminal
- Optional wall-mount bracket, model YC-280

IP Remote Microphone Station

N-8610RM

- Employs packet audio technology
- Connect to a LAN or WAN network
- Power can supplied to the microphone using a PoE-compatible switching hub

Model	N-8600MS	N-8510MS	N-8610RM
Power Source	Power supply device that complies with IEEE802.3af standard or 12V DC (supplied from the AC adapter (option))		
Power Consumption	Use of the AC adapter (12 V DC): 2.5 W (station only) Use of the PoW (48 V DC): 3W	4.2 W (at rated), 6W (max.)	Use of the AC adapter (12 V DC): 4W (microphone only), 8.5W (when connecting 4 RM-210 Extension units) Use of the PoE (48 V DC): 5.2W (microphone only), 7.5W (when connecting 4 RM-210 Extension units)
Speech Method	Hands-free or handset conversation		Hands-free or handset conversation (Use of goose-neck microphone)
Audio Frequency Range	300 Hz - 7 kHz		
External Speaker Terminal	Maximum output 0.5W, 8Ω, screwless connector (2P)	--	
External Control Input Terminal	--	No-voltage contact input, open voltage: 5V DC short-circuit current: 5mA or less, screwless connector (2 pins)	--
No. of Connectable Expansion	--		Max. 4 units (max. 2 units at PoE power supply)
NETWORK SECTION			
Network I/F	10BASE-T/100BASE-TX (Automatic-Negotiation)		
Network Protocol	TCP/IP, UDP, ARP, ICMP, TTTP, RTP, IGMP		
Audio Packet Transmission System	Unicast, Multicast		
Voice Packet Loss Recovery	Silence insertion		
Audio Delay Time	80 ms, 320 ms (controllable by the software)		
Finish	Body, handset: ABS resin, gray		ABS resin, blueish-gray
Dimensions	148 (W) x 208 (H) x 70.5 (D) mm (5.8" x 8.2" x 2.8") (excluding a curl cord section)		190 (W) x 76.5 (H) x 215 (D) mm (7.5" x 3" x 8.5") (excluding microphone)
Weight	770 g (1.7 lb)	640 g (1.6 lb)	700 g (1.5 lb)
Accessory	CD (for PC setting, maintenance use) x 1	CD (for PC setting, maintenance use, emergency message creating software) x 1	CD (for PC setting, maintenance use) x 1
Option	Wall mounting bracket: YC-280, AC adapter: AD-1215P		Remote Microphone extension: RM-210, AC adapter: AD-1215P

*0 dB = 1 V

Optional accessories on page 89.

N-8000 Series IP Base Station

IP Door Station

N-8640DS

- Chemical resistant for use in industrial/harsh environments.
- 4 contact outputs /one input for use with access controls systems and remote dialers.
- External speaker connection 0.5W @ 8 ohms.
- Allows Full-duplex conversation with master stations.

IP Indoor Station Weather-resistant

Q-N8640DS

IP Indoor Station

N-8650DS

- Indoor use IP door station employing packet audio technology
- Connected to an IP network (LAN or WAN) permits hands-free conversation
- Equipped with 1 channel of control input, 5 channels of control outputs (including 1 channel of relay control output), and 1 speaker output

IP Door Station Board Unit

N-8640SB

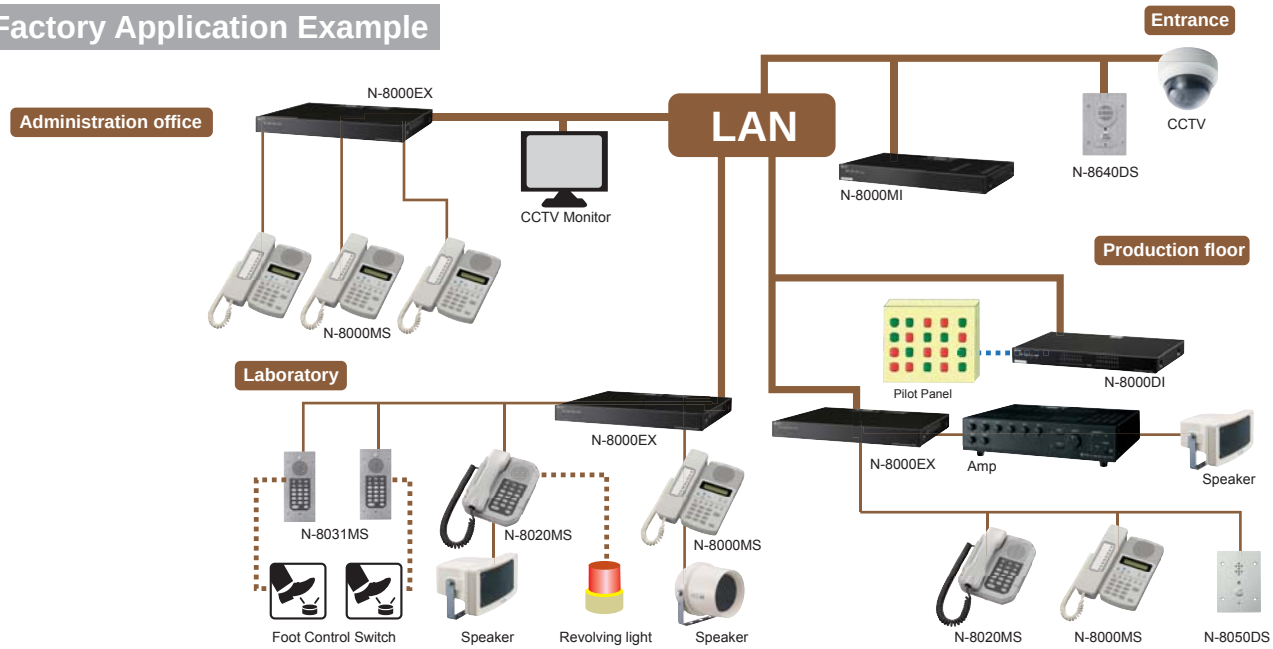
- Chemical resistant for use in industrial/harsh environments.
- 4 contact outputs /one input for use with access controls systems and remote dialers.
- External speaker connection 0.5W @ 8 ohms.
- Allows Full-duplex conversation with master stations.

Model	N-8640DS	Q-N860DS	N-8650DS	N-8640SB
Power Source	Power supply device that complies with IEEE802.3af standard or 12V DC (supplied from the AC adapter (option))			
Power Consumption	Use of the AC adapter (12 V DC): 3.5 W (station only), Use of the PoW (48 V DC): 5W			
Speech Method	Hands-free conversation			
Audio Frequency Range	300 Hz - 7 kHz			
Control Input	1 channel, no-voltage make contact input, open circuit voltage: 5 V DC, short circuit current: 10 mA or less, unterminated ends			
Control Output	Open collector output, 4 channels, withstand voltage: 30 V DC, control current: Max. 50 mA (4 output 1COMMON), unterminated ends Relay contact output, 1 channel, withstand voltage: 30 V DC, control current: Max. 500 mA, unterminated ends			
External Speaker Terminal	Maximum output 0.5 W, 8 Ω, unterminated ends			
NETWORK SECTION				
Network I/F	10BASE-T/100BASE-TX (Automatic-Negotiation)			
Network Protocol	TCP/IP, UDP, ARP, ICMP, TTTP, RTP, IGMP			
Audio Packet Transmission System	Unicast, Multicast			
Voice Packet Loss Recovery	Silence insertion			
Audio Delay Time	80 ms, 320 ms (controllable by the software)			
Dust/Water Protection	IP 65 (note that panel edges must be sealed at installation)		--	
Finish	Plate: Stainless steel, hairline, Call button: Metal			--
Dimensions	115 (W) x 162 (H) x 58.5 (D) mm (4.5” x 6.4” x 2.3”)		117.2 (W) x 162 (H) x 60 (D) mm (4.6” x 6.4” x 2.3”)	79 (W) x 134 (H) x 53 (D) mm (3.1” x 5.3” x 2.1”)
Weight	780 g (1.7 lb)		400 g (0.8 lb)	350 g (0.8 lb)
Accessory	Box mounting screw (No.6-32UNC x 20) x 4, Box mounting screw (M4 x 20) x 4, Waterproof washer x 4, LAN coupler x 1	--	Box mounting screw (No.6-32UNC x 20) x 4, Box mounting screw (M4 x 20) x 4, LAN coupler x 1	--
Option	AC adapter: AD-1215P; Applicable Box: Wall mount: Wall-mount box YS-13A, Flush Mount: 3-gang electrical box or Back box YC-150			AC adapter: AD-1215P

*0 dB = 1 V

Optional accessories on page 89.

Factory Application Example



N-8000 Series 2-Wire Type Station

Multifunctional Master Station

N-8000MS

- Full-Duplex (aka: Duplex) communication is supported by this station
- Two-wire connection to N-8000EX or N-8010EX Exchange
- Handset or hands-free duplex communication

Standard Master Station

N-8010MS

- Full-Duplex (aka: Duplex) communication is supported by this station
- Two-wire connection to N-8000EX or N-8010EX Exchange
- Handset or hands-free duplex communication

Industrial-Use Master Station

N-8020MS

- Full-Duplex (aka: Duplex) communication is supported by this station
- Heavy duty dust proof and waterproof construction (IP54 rating)
- External speaker terminal (0.6 W / 8 ohms)

Standard Hands-Free Master Station

N-8011MS

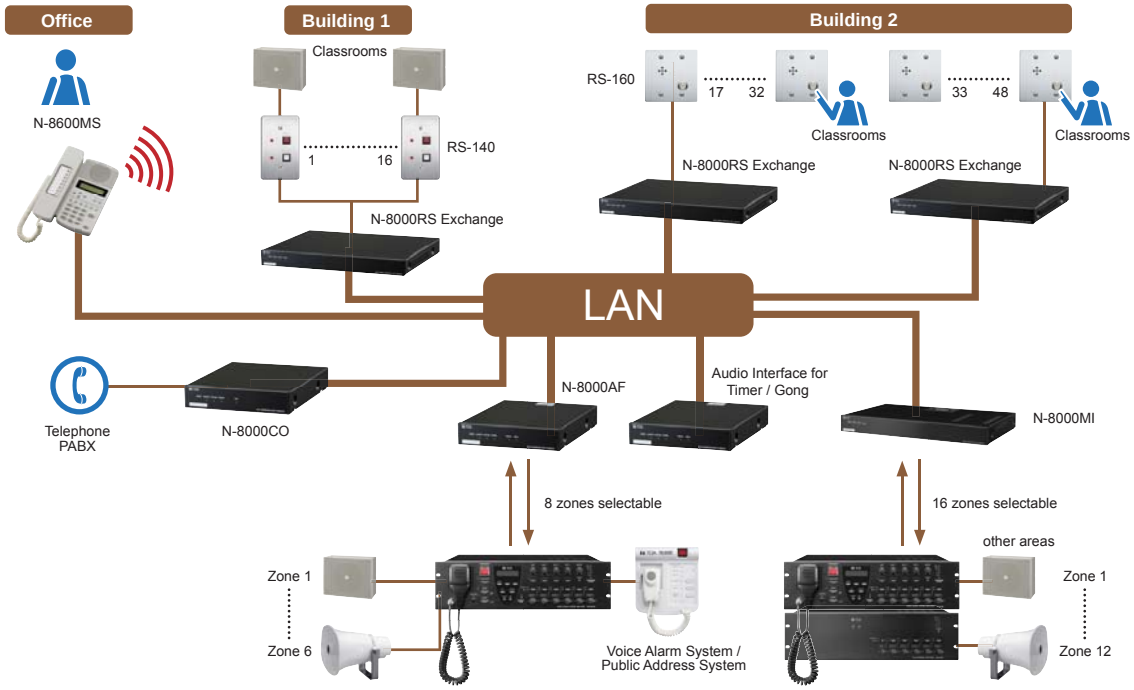
- Full-Duplex (aka: Duplex) communication is supported by this station (handset mode only)
- Two-wire connection to N-8000EX or N-8010EX Exchange
- Hands-free duplex communication

Model	N-8000MS	N-8010MS	N-8011MS	N-8020MS
Power Source	48V DC (supplied from the IP network intercom exchange (option))			
Power Consumption	1.8 W (at rated), 2.4W (max.)			
Wiring Method	1 set of twisted pair cable			
Speech Method	Hands-free or handset conversation		Hands-free conversation	Hands-free or handset conversation
Audio Frequency Range	300 Hz – 7 kHz			
Transmission Range	Max. 1500 m (ø0.65 mm, Loop resistance 170 Ω)			
Dial-in Contact Output	--			Open collector output (polarized), Withstand voltage: Max. 30V DC, Control current: Max. 50 mA, screwless connector (2P)
External Speaker Terminal	0.6W, 8Ω, screwless connector (2P)	--		0.6W, 8Ω, screwless connector (2P)
Dust/Water Protection	--			IP54
Finish	Body, Handset: ABS resin, gray		Body: ABS resin, gray	Body, Handset: ABS resin, gray
Dimensions	148 (W) x 208 (H) x 70.5 (D) mm (5.2" x 8.2" x 2.8") (excluding a curl cord section)		92 (W) x 195 (H) x 56.1 (D) mm (3.6" x 7.7" x 2.2")	170 (W) x 220 (H) x 97.8 (D) mm (6.7" x 8.7" x 3.9") (excluding a curl cord section)
Weight	800 g (1.8 lbs)	700 g (1.5 lbs)	400 g (0.9 lbs)	1 kg (2.2 lbs)
Accessory	Connection cord (3m) x 1			Rubber cap x 2
Option	Wall mounting bracket: YC-280		Wall mounting bracket: YC-290	Wall mounting bracket: YC-280

*0 dB = 1V

Optional accessories on page 89.

School Application Example



N-8000 Series 2-Wire Type Station

Flush-Mount Master Station

N-8033MS

- Especially for hospitals
- IP-65 rated outdoor in-wall Master Station.
- Chemical resistant for use in industrial/harsh environments.
- One input for use with foot switch dialing.

Flush-Mount Hands-Free Master Station

N-8031MS

- Full-Duplex (aka: Duplex) communication is supported by this station (handset mode only)
- Two-wire connection to N-8000EX or N-8010EX Exchange
- Hands-free duplex communication
- External dial inputs (7, 8, 9 and C keys)
- Optional Handset, model RS-191

Hands-Free Master Station Board Unit

N-8031SB

- Full-Duplex (aka: Duplex) communication is supported by this station
- N-8031 PCB for custom station applications
- Speaker and microphone included
- External dial inputs (7, 8, 9 and C keys) plus switch matrix connection
- LED Status Indicator output

Door Station

N-8050DS
Q-N8050WPB51800**

- Full-Duplex (aka: Duplex) communication is supported by this station
- Hands-free duplex communication
- Separate mic and speaker
- Control output (open collector)
- IP-54 rated
- Q-N8050WPB51800 has a rubber boot covering the call button

Q-N8050WPB51800**

Hands-Free Substation Board Unit

N-8050SB

- Full-Duplex (aka: Duplex) communication is supported by this station
- N-8050DS PCB for custom station applications
- Speaker and microphone included
- Control output (open collector)
- Call switch input
- LED Status Indicator output

Optional Handset

RS-191

Model	N-8033MS	N-8031MS	N-8031SB	N-8050DS	Q-N8050WPB51800**	N-8050SB
Power Source	48V DC (supplied from the IP network intercom exchange (option))					
Power Consumption	1.8 W (at rated), 2.4 W (max.)					
Wiring Method	1 set of twisted pair cable		Non-polar 1 pair stranded wire system	1 set of twisted pair cable	Non-polar 1 pair stranded wire system	
Speech Method	Hands-free conversation	Hands-free conversation (Handset conversation can be established in conjunction with the RS-191 (option))		Hands-free conversation		
Audio Frequency Range	300 Hz – 7 kHz					
Transmission Range	Max. 1500 m (ø0.65 mm, Loop resistance 170 Ω)					
Contact Output	--			Open collector output, withstand voltage: Max. 30V DC, Control current: Max. 50 mA, one shot: can be set from 1 to 9 s, screw terminal (polarized)		
External Dial Input	No-voltage make contact input, open voltage: 5 V DC, short-circuit current: 1 mA, screwless connector (5 p)			--		
Dust/Water Protection	IP65*	--		IP54*		--
Housing Protection	--			BS EN62262: 2002 IK02 equivalent		--
Resistance to Environment	Chemical Resistant	--			Passed our gas corrosion test and neutral salt spray test	--
Finish	Body, Handset: ABS resin, gray	Panel: Stainless steel, hairline	--	Plate: Stainless steel, hairline, Call button: Metal	Plate: Stainless steel, hairline, Call button: Metal; Circuit board: Silicone sealing agent-coated board	--
Dimensions	115 (W) x 254 (H) x 51 (D) mm (4.5” x 10” x 2.1”)		70 (W) x 185 (H) x 20.6 (D) mm (2.6”x7.3”x0.8”)	115 (W) x 162 (H) x 54 (D) mm (4.5” x 6.4” x 2.1”)		67 (W) x 128.3 (H) x 26 (D) mm (2.6”x5”x1”)
Weight	850 g (1.9 lbs)		205 g (0.6 lbs)	680 g (1.5 lbs)		100 g (0.2 lbs) (including accessories)
Accessory	Box mounting screw (M4 x 35) x 4, Acoustic absorbent x 1, Removable terminal plug (2P, preinstalled on the unit) x 1	Box mounting screw (N..6-32UNC x 18) x4, Box mounting screw (M4 x 25) x 4, Acoustic absorbent x 1, Removable terminal plug (2P, preinstalled on the unit) x 1, Handset jumper (8P, preinstalled on the unit) x 1, Ferrite clamp x 1	Removable terminal plug (2P, preinstalled on the unit) x 1, Handset jumper (8P, preinstalled on the unit) x 1, Ferrite clamp x 1, Hands-free speaker (with connection cord) x 1, Hands-free microphone (with connection cord) x 1	Box mounting screw (No.6-32UNC x 18) x 4, Box mounting screw (M4 x 25) x 4, Acoustic absorbent (made of felt) x 1	Box mounting screw (No.6-32UNC x 18) x 4, Box mounting screw (M4 x 25) x 4	Hands-free speaker (with connection cord) x 1, Hands-free microphone (with connection cord) x 1
Option	Back Box: YC-841	Flush mount: Back Box: YC-241, Surface mount: Wall-mount box: YC-251, Handset: RS-191	Handset: RS-191	Flush mount: 3-gang electrical box or Back Box: YC-150, Wall mount: Wall-mount box: YS-13A		--

* Note that panel edges must be sealed at installation

** Special Order Product

Optional accessories on page 89.

N-8000 Series Exchanges and Interface Units

IP Network Intercom Exchange

N-8000EX

- 10/100BaseTX Ethernet network connection
- Occupies one network node (192 max.)
- Sixteen (16) station capacity
- Speech links: 4 internal / 8 external
- Two (2) audio paging outputs (0 dBV)
- Two (2) relay outputs

IP Network Intercom Exchange

N-8010EX

- Stations connect to exchange via two-wire twisted pair
- Provides 48 VDC to each station
- Speech links: 1 internal / 2 external
- 10/100BaseTX Ethernet network connection
- Occupies one network node (192 max.)
- Includes rack-mount and wall-mount brackets

Model	N-8000EX	N-8010EX
Power Source	120V AC, 50/60Hz	
Power Consumption	50W (at rated), 75W (max.)	
Interface Section or Station		
Speech Link	Internal: 4/External: 8	Internal: 1/External: 2
Line Capacity	Up to 16 stations	
Wiring Method	1 set of twisted pair cables	
Transmission Range	Max. 1500 m (ø0.65 mm, Loop resistance 170 Ω)	
Paging Output	Audio: 2 channels Max. 0dB*, 600Ω, balanced Control: 2 channels, no-voltage make contact output (24V DC/0.5A), Connector: removable terminal block	Station paging only
Network Section		
Network I/F	10BASE-T/100BASE-TX (Automatic-Negotiation)	
Network Protocol	TCP/IP, UDP, ARP, ICMP, HTTP, RTP, IGMP	
Audio Packet Transmission System	Unicast, Multicast	
Audio Packet Omission	Silence insertion	
Audio Delay Time	80 ms, 320 ms (Controllable by the software)	
Finish	Pre-coated steel plate, black, 30% gloss	
Dimensions	420 (W) x 44.3 (H) x 356 (D) mm (16.5" x 1.7" x 14")	
Weight	4.1 kg (9 lbs)	4.2 kg (9.3 lbs)
Accessory	AC power cord (2m (6.56 ft)) x 1, CD (for PC setting, maintenance use) x 1, Removable terminal plug (4 pins) x 2, Mini-clamp plug (2 pins) x 20, Plastic foot x 4, Screw for fitting plastic foot x 4, Rack mounting bracket x 2, Screw for rack mounting x 4, Wall mounting bracket x 2, Screw for mounting bracket x 8, Screw for wall mounting x 4	

*0 dB = 1V

Telephone Interface Unit

N-8000AL

- 10/100BaseTX Ethernet network connection
- Occupies one network node (192 max.)
- Single telephone line allowing an analog telephone to be connected.
- Allows any analog telephone to function as a master station.

C/O Interface Unit

N-8000CO

- 10/100BaseTX Ethernet network connection
- Occupies one network node (191 max - at least one node must be a master station or N-8000/8010EX exchange)
- Analog central office line circuit allowing the stations to make and receive calls to and from the telephone line.

Model	N-8000AL	N-8000CO
Power Source	120V AC, 50/60Hz	
Power Consumption	8W (Max.)	7W (Max.)
Interface (Telephone or C/O)		
Number of Lines	1 line	
Selective Signal Type	DTMF Signal	
Signal System	--	Compatible with loop start signaling
Monitor Function	Line loop detection	--
Control Function	Caller ID Function	--
Wiring Method	1 pair of twisted pair cable	
Network Section		
Network I/F	10BASE-T/100BASE-TX (Automatic-Negotiation)	
Network Protocol	TCP/IP, UDP, ARP, ICMP, HTTP, RTP, IGMP	
Audio Packet Transmission System	Unicast, Multicast	
Audio Packet Omission	Silence insertion	
Audio Delay Time	80 ms, 320 ms (Controllable by the software)	
Finish	Pre-coated steel plate, black, 30% gloss	
Dimensions	420 (W) x 44.3 (H) x 356 (D) mm (16.5" x 1.7" x 14")	
Weight	4.1 kg (9 lbs)	4.2 kg (9.3 lbs)
Accessory	Power cord (2m (6.56 ft)) x 1, CD (for PC setting, maintenance use) x 1, Mini-clamp plug (2 pins) x 2, Plastic foot x 4, Screw for fitting plastic foot x 4,	
Option	Rack mounting bracket: MB-15B-BK, MB-15B-J; Wall mounting bracket: YC-850	

*0 dB = 1V

Optional accessories on page 89.

N-8000 Series Interface Units

Multi Interface Unit

N-8000MI

- 0/100BaseTX Ethernet network connection
- Occupies one network node (192 max.)
- Contact Bridge
- Sixteen contact inputs
- Sixteen relay outputs
- Telephone Interface (E&M type), two channels

Direct Select Unit

N-8000DI

- 10/100BaseTX Ethernet network connection
- Occupies one network node (192 max.)
- 32 contact inputs
- 32 contact outputs
- Events may be activated by contact closures or master station dialing commands.
- Provides control interface to CCTV, door access and other external systems.

Audio Interface Unit

N-8000AF

- 10/100BaseTX Ethernet network connection
- Occupies one network node (192 max.)
- One MIC/LINE audio line input
- One audio line output
- Eight contact inputs
- Time Synchronization input
- Built-in timer and chime

IP Interface Module

SX-200IP

- 10BASE-T/100BASE-TX (Automatic-Negotiation)
- Voice sampling frequency of 16 kHz, 8 kHz (controllable on the software); 48 kHz, sample rate is used for SX-2000 system only
- Voice encoding method - Sub-band ADPCM, Cryptosystem
- Voice Packet Loss Recovery - Silence insertion
- Allows for a page to be made from the N-8000 Series Stations (N-8600MS, N-8610RM only) to the SX-2000 Series.

Model	N-8000MI	N-8000DI	N-8000AF
Power Source	120V AC, 50/60Hz		
Power Consumption	21W (330 mA) (Max.)	16W (Max.)	7W (Max.)
Audio Input	Input: 2 inputs (2P/input), Max. 0dB*, under 600Ω, balanced, with a semi-fixed volume for adjustment (0 to –25dB); Control: 2 inputs (2P/input), no-voltage make contact input, open voltage: 12V DC, short-circuit current: 10mA; Removable terminal block (8 pins)	--	1 input (transformer isolated), -58dB* to 0dB*, 2kΩ, balanced (MIC/LINE input, controllable by the software) with input volume control knob, removable terminal block (3 pins)
Audio Output	Output: 2 outputs (2P/output), Max. 0dB*, under 600Ω, balanced Control: 2 outputs (2P/output), relay contact output, contact capacity: 24V DC/0.5A, Removable terminal block (8 pins)	--	1 output (transformer isolated), 0dB*, 600Ω, balanced, removable terminal block (3 pins)
Contact Input	16 inputs, no-voltage make contact input, open voltage; 12V DC, short-circuit current: 10mA, removable terminal block (18 pins)	32 inputs, no-voltage make contact input, open voltage: 24V DC, short-circuit current: 5mA or less, removable terminal block (20 pins), (1 common terminal for 4 inputs)	--
Contact Output	16 outputs, relay contact output, contact capacity: 24V DC/0.5A, removable terminal block (18 pins)	32 outputs, relay contact output, contact capacity: 24V DC/2 – 500mA, removable terminal block (32 pins)	8 outputs, relay contact output, contact capacity: 24V DC/2 – 500mA, removable terminal block (16 pins)
Network Section			
Network I/F	10BASE-T/100BASE-TX (Automatic-Negotiation)		
Network Protocol	TCP/IP, UDP, ARP, ICMP, HTTP, RTP, IGMP		
Audio Packet Transmission System	Unicast, Multicast	--	Unicast, Multicast
Audio Packet Omission	Silence insertion	--	Silence insertion
Audio Delay Time	80 ms, 320 ms (Controllable by the software)	--	80 ms, 320 ms (Controllable by the software)
Finish	Pre-coated steel plate, black, 30% gloss		
Dimensions	420 (W) x 44.3 (H) x 239.5 (D) mm (16.5" x 1.7" x 9.4")	420 (W) x 44.3 (H) x 267 (D) mm (16.5" x 1.7" x 10.5")	210 (W) x 44.3 (H) x 267 (D) mm (8.3" x 1.7" x 10.5")
Weight	2.8 kg (6.2 lbs)		1.7 kg (3.7 lbs)
Accessory	Power cord (2m (6.56 ft)) x 1, CD (for PC setting, maintenance use) x 1, Mini-clamp plug (2 pins) x 10, Removable terminal plug (8 pins) x 2, Removable terminal plug (3 pins) x 2, Removable terminal plug (9 pins) x 4, Plastic foot x 4, Screw for fitting plastic foot x 4, Rack mounting bracket x 2, Screw for rack mounting bracket x 8, Screw for rack mounting x 4	Power cord (2m (6.56 ft)) x 1, CD (for PC setting, maintenance use) x 1, Removable terminal plug (10 pins) x 4, Removable terminal plug (16 pins) x 4, Plastic foot x 4, Screw for fitting plastic foot x 4, Rack mounting bracket x 2, Screw for rack mounting bracket x8, Screw for rack mounting x4	Power cord (2m (6.56 ft)) x 1, CD (for PC setting, maintenance use) x 1, Removable terminal plug (2 pins) x 1, Removable terminal plug (3 pins) x 2, Removable terminal plug (5 pins) x 2, Removable terminal plug (8 pins) x 2, Plastic foot x 4, Screw for fitting plastic foot x 4,
Option	--	Wall mounting bracket: YC-850	Rack mounting bracket: MB-15B-BK, MB-15B-J; Wall mounting bracket: YC-850

*0 dB = 1V

Model	SX-200IP
Network Section	
Network I/F	10BASE-T/100BASE-TX (Automatic-Negotiation)
Network Protocol	TCP/IP, UDP, ARP, ICMP, HTTP, RTP, IGMP
Audio Packet Omission	Silence insertion
Audio Delay Time	80 ms, 320 ms (Controllable by the software)
Finish	Pre-coated steel plate, black, 30% gloss
Dimensions	35 (W) x 119.5 (H) x 117.4 (D) mm (1.38" x 4.7" x 7.02")
Weight	150 g (0.33 lbs)

Optional accessories on page 89.

N-8000 Series 2-Core Shielded Cable Type

Sub-station Interface Unit

N-8000RS

- 10/100BaseTX Ethernet network connection
- Occupies one network node (191 max - at least one node must be a master station or N-8000/8010EX exchange)
- Up to 16 substations connectable using twisted pair shielded cable
- Speech links: 2

Sub-station Interface Unit

N-8010RS

- 10/100BaseTX Ethernet network connection
- Occupies one network node (191 max - at least one node must be a master station or N-8000/8010EX exchange)
- Up to 16 substations connectable using twisted pair shielded cable
- Speech links: 1

Sub-station (Emergency Use)

RS-180

- Heavy-duty brushed stainless steel faceplate, #11 Gauge.
- Vandal resistant call button and speaker plate.
- Red Call Assurance LED for ADA-compliance.
- Weather resistant conformal printed circuit board coating.

Sub-station (Outdoor Vandal-Resistant Type)

RS-170

- Provides half-duplex communication.
- Heavy-duty brushed stainless steel faceplate, #11 Gauge.
- Vandal resistant call button and speaker plate.
- May be programmed to communicate with a single master station.
- Weather resistant conformal printed circuit board coating.

Sub-station (Indoor Vandal-Resistant Type)

RS-160

- Provides half-duplex communication.
- Heavy-duty brushed stainless steel faceplate, #11 Gauge.
- Vandal resistant call button and speaker plate.
- May be programmed to communicate with a single master station.

Sub-station (Indoor Type)

RS-150

- Provides half-duplex communication.
- Hairline brushed stainless steel faceplate, #14 Gauge.
- Connects to N-8000RS/N-8010RS.
- May be programmed to communicate with a single master station.

Substation (ADA-Compliant Emergency Outdoor type)

Q-RS180BZ

- ADA compliant with Braille labeling
- Large easy-access mushroom button
- Contact output for use with emergency lighting or access control systems.
- Works with N-8000RS & N-8010RS exchanges using shielded twisted pair connection.

Model	N-8000RS	N-8010RS
Power Source	120 V AC, 50/60 Hz	
Power Consumption	35 W (at rated), 45 W (Max.)	26 W (at rated), 32 W (Max.)
INTERFACE SECTION FOR SUB-STATION		
Number of Lines	16 lines	
Number of Speech Link	2 links	1 links
Transmission Range	500 m (546.81 yd)/ø0.5 mm (AWG24, 800 m (874.89 yd)/ø0.65 mm (AWG21), 1300 m (1421.7 yd) ø0.9 mm (AWG19)	
Wiring Method	Two-core shielded cable	
NETWORK SECTION		
Network I/F	10BASE-T/100BASE-TX (Automatic-Negotiation)	
Network Protocol	TCP/IP, UDP, ARP, ICMP, TTTP, RTP, IGMP	
Audio Packet Transmission System	Unicast, Multicast	
Voice Packet Loss Recovery	Silence insertion	
Audio Delay Time	80 ms, 320 ms (controllable by the software)	
Finish	Pre-coated steel plate, black, 30% gloss	
Dimensions	420 (W) x 44.3 (H) x 325.5 (D) mm (16.54" x 1.74" x 12.81")	117.2 (W) x 162 (H) x 60 (D) mm (4.6" x 6.4" x 2.3")
Weight	3.9 kg (8.6 lb)	400 g (0.8 lb)
Accessory	Power cord (2 m (6.56 ft)) x1, CD (for PC setting, maintenance use) x1, Removable terminal plug (3P) x16, Plastic foot x4, Screw for fitting plastic foot x4, Rack mounting bracket x2, Screw for mounting bracket x8, Screw for rack mounting x4	
Option	Wall mounting bracket: YC-850	

Optional accessories on page 89.

N-8000 Series 2-Core Shielded Cable Type

IP Intercom Switch Panel

RS-144

- May be programmed for dual-priority call or call into two different master stations.
- Connects to N-8000RS & N-8010RS exchanges via shielded twisted pair wire and 25V speaker for half-duplex communication with assigned master station.
- Optional RS-141 handset may also be used.

IP Intercom Switch Panel

RS-143

- Connects to N-8000RS & N-8010RS exchanges via shielded twisted pair wire and 25V speaker for half-duplex communication with assigned master station.
- Optional RS-141 handset may also be used.

Switch Panel

RS-140

- Call button and privacy button with LED Indicators.
- Supports two-way (half-duplex) communication.
- Prevents incoming calls, pages & scans by pushing the privacy switch.
- Private, handset conversation is available using the RS-141.
- Connects to N-8000RS/8010RS using twisted two-core, shielded cable.

IP Intercom Switch Board

RS-142

- Allows configuration with custom housing and switch.
- May be programmed for dual-priority call or call into two different master stations.
- Connects to N-8000RS & N-8010RS exchanges via shielded twisted pair wire and 25V speaker for half-duplex communication with assigned master station.
- Optional RS-141 handset may also be used

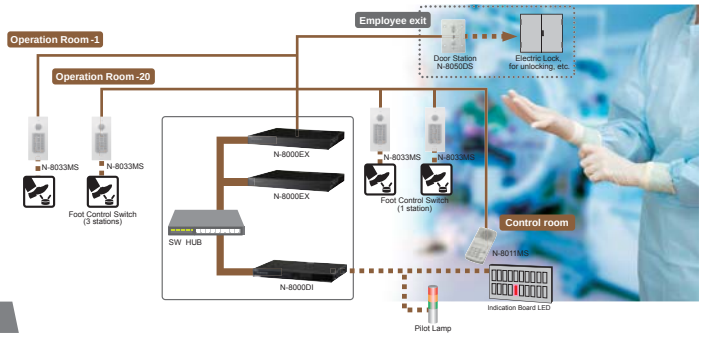
Optional Handset

RS-141

Model	RS-144	RS-143	RS-140	RS-142
Call Button	Momentary (EMERGENCY, NORMAL)	Momentary		Wiring: 4 cables (for 2 momentary switches)
Privacy Switch	--		Latching	--
Wiring	Two-core shielded cable			
Transmission Range	0.5 km (546 yd)/ø0.5 mm (AWG24); 0.8 km (874 yd)/ø0.65 mm (AWG22); 1.3 km (1421 yd)/ø0.9 mm (AWG19)			
Finish	Plate: Stainless steel, hairline Call button (emergency): resin, red Call button (normal): resin, white	Plate: Stainless steel, hairline Call button (normal): resin, red	Plate: Stainless steel, hairline; Call button: resin, red Privacy button (normal): resin, white	--
Dimensions	70.1 (W) x 115.1 (H) x 28.6 (D) mm (2.76" × 4.53" × 1.13")			--
Weight	80 g (0.18 lb)			30 g (0.07 lb)
Accessory	Mounting bracket x 1, bracket mounting screw (No.6-32UNC x 18) x 2, Box mounting screw (M4 x 30) x 2, Box mounting screw (No.6-32UNC x 30) x2			--
Option	RS-141			

Model	RS-180	Q-RS180BZ	RS-170	RS-160	RS-150
Rated Impedance	625 Ω (1 W/25 V)				
Internal Speaker	4 cm cone-type				
Wiring	Two-core shielded cable				
Transmission Range	0.5 km (546 yd)/ø0.5 mm (AWG24); 0.8 km (874 yd)/ø0.65 mm (AWG22); 1.3 km (1421 yd)/ø0.9 mm (AWG19)				
Control Output	Open collector output: 30 V DC, 30 mA (The open collector output is kept turned on till the conversation is finished after the call button was pressed.)		--		
Finish	Panel: Stainless steel, hairline, Call button: Metal, Printed circuit board: Weather-resistant coating	Panel: Stainless steel, hairline Braille: "EMERGENCY PUSH FOR HELP" "FLASHING: CALL PLACED STEADY: CALL ANSWERED" Call button: Metal (RED mushroom); Printed circuit board: Weather-resistant coating	Panel: Stainless steel, hairline, Call button: Metal, Printed circuit board: Weather-resistant coating	Panel: Stainless steel, hairline, Call button: Metal	Panel: Stainless steel, hairline, Call button: Resin
Dimensions	120(W)x120(H)x58.5(D) mm (4.72" × 4.72" × 2.3")	115(W)x162(H)x66.8(D) mm (4.53" × 6.38" × 2.63")	120 (W) x 120 (H) x 57.5 (D) mm (4.72" × 4.72" × 2.26")		120(W)x120(H)x48.5(D) mm (4.72" × 4.72" × 1.91")
Weight	570 g (1.26 lb)	700 g (1.54 lb)	540 g (1.19 lb)		410 g (0.90 lb)
Accessory	Box mounting screw (No.6-32UNC x 8) x 4, Box mounting screw (M4 x 25) x 4				
Option	For flush mount: 2-gang electrical box: YC-302 For surface mount: Indoor wall-mount box: YC-822 Outdoor wall-mount box: YC-823	3-gang electrical box: YC-150 or YS-13A	For flush mount: 2-gang electrical box: YC-302 For surface mount: Indoor wall-mount box: YC-822 Outdoor wall-mount box: YC-823	For flush mount: 2-gang electrical box: YC-302 For surface mount: Indoor wall-mount box: YC-822	

Hospital Application Example



Optional accessories on page 89.

N-8000 Series 4-Wire Type

Sub-station Interface Unit

N-8400RS

- 10/100BaseTX Ethernet network connection
- Occupies one network node (191 max - at least one node must be a master station or N-8000/8010EX exchange)
- Up to 16 substations connectable using 2 sets of twisted pair cables
- Speech links: Internal 1, External 2

Model	N-8400RS
Power Source	120 V AC, 50/60 Hz
Power Consumption	35 W (at rated), 45 W (Max.)
INTERFACE SECTION FOR SUB-STATION	
Number of Lines	16 lines
Number of Speech Links	Internal 1, External 2
Transmission Range	1000 m (1093.61 yd)/ø0.5 mm (AWG24, 1500 m (1640.42 yd)/ ø0.65 mm (AWG21), 2000 m (2187.23 yd) ø0.9 mm (AWG19)
Wiring Method	2 sets of twisted pair cables
NETWORK SECTION	
Network I/F	10BASE-T/100BASE-TX (Automatic-Negotiation)
Network Protocol	TCP/IP, UDP, ARP, ICMP, TTTP, RTP, IGMP
Audio Packet Transmission System	Unicast, Multicast
Voice Packet Loss Recovery	Silence insertion
Audio Delay Time	80 ms, 320 ms (controllable by the software)
Finish	Pre-coated steel plate, black, 30% gloss
Dimensions	420 (W) x 44.3 (H) x 325.5 (D) mm (16.54" x 1.74" x 12.81")
Weight	4 kg (8.82 lb)
Accessory	Power cord (2 m (6.56 ft)) x1, CD (for PC setting, maintenance use) x1, Removable terminal plug (4P) x16, Plastic foot x4, Screw for fitting plastic foot x4,Rack mounting bracket x2, Screw for mounting bracket x8, Screw for rack mounting x4
Option	Wall mounting bracket: YC-850

Analog Standard Master Station

N-8410MS

- Low-cost analog Master Station operates on 4-wire connection with N-8400RS.
- Complete system can be configured on one exchange with RS-4xx substations.

Model	N-8410MS
Power Source	24 V DC (supplied form the sub station interface unit N-8400RS)
Current Consumption	Max 30 mA
Wiring Method	2 sets of twisted pair cable
Speech Method	Hands-free or handset conversation
Audio Frequency Range	300 Hz - 7 kHz
Transmission Range	1 km (1093 yd)/ø0.5mm (AWG24); 1.5 km (1640 yd)/ø0.65mm (AWG22); 2 km (2187 yd)/ø0.9 mm (AWG19)
Finish	Body, Handset: ABS resin, gray
Dimensions	148 (W) x 208 (H) x 70.5 (D) mm (5.83" × 8.19" × 2.78")
Weight	720 g (1.59 lb)
Accessory	Connection cord (3 m (9.84 ft)) x 1
Option	Wall mounting bracket: YC-280

Sub-station (Video Intercom)

RS-480VSET

- Color video camera
- Indoor and outdoor us
- Includes 1 of each: RS-480V + IF-480V

Model	RS-480VSET [RS-480V]
Power Source	Supplied from IF-480V
Call Button	Momentary (Emergency call: Press twice within 400 ms)
Rated Input	1W
Internal Speaker	Cone-type
Internal Microphone	Electret condenser type
Wiring	CAT5 cable, RJ45 female connector attached
Transmission Range	3,000ft (AWG24)
Control Output	Open collector, Maximum controlled voltage: 30 V DC Control current: 30 mA
Finish	Panel: Stainless steel, hairline Call button: Metal, silver
Dimensions	120 (W) x 120 (H) x 50.5 (D) mm (4.72" × 4.72" × 1.9")
Weight	605 g (1.3 lb)
Accessory	Box mounting screw (No.6-32UNC x 18) x 4 Machine screw (M4 x 25) x 4
Option	2-gang electrical box: YC-302
Model	**RS-480VSET [IF-480V]**
Power Source	Supplied AC adapter must be used
Indicator	Power LED (green), Lock LED (blue), Colour LED (orange)
Connectors	RJ45 (to RS-480V), Removable terminal block 4P (to N-8400RS), BNC (video out) x2
Finish	Anodized aluminum, black
Dimensions	105 (W) x 33 (H) x 127 (D) mm (4.13" × 1.3" × 5")
Weight	285 g (0.6 lb)
Accessory	AC adapter
Option	Rack mount plate: MB-480V4 (up to four IF-480Vs are mountable in 1 unit)

Optional: IF-480V Rack Mounting Panel

MB-480V4

- Up to 4 IF-480V are mountable in 1 rack unit.

Optional accessories on page 89.

N-8000 Series 4-Wire Type

Sub-station (Emergency Use)

RS-480

- Provides half-duplex communication.
- Dust proof and waterproof construction (IP54 rating).
- Heavy-duty brushed stainless steel faceplate.
- Red vandal resistant call button.
- Control output - open collector type for external relay control.
- Weather resistant conformal printed circuit board coating.
- Built-in electret condenser microphone.

Sub-station (Outdoor Vandal-Resistant Type)

RS-470

- Provides half-duplex communication.
- Dust proof and waterproof construction (IP54 rating).
- Heavy-duty brushed stainless steel faceplate.
- Vandal resistant call button.
- Weather resistant conformal printed circuit board coating.
- Built-in electret condenser microphone.
- Connects to N-8400RS using two twisted pair cable.

Sub-station (Indoor Vandal-Resistant Type)

RS-460

- Provides half-duplex communication.
- Heavy-duty brushed stainless steel faceplate.
- Vandal resistant call button and speaker plate.
- Built-in electret condenser microphone.
- Connects to N-8400RS using two twisted pair cable.

Sub-station (Indoor Type)

RS-450

- Provides half-duplex communication.
- Hairline brushed stainless steel faceplate.
- Built-in electret condenser microphone.
- Connects to N-8400RS using two twisted pair cable.

IP Intercom Switch Board

RS-442

- Allows configuration with custom housing and switch.
- May be programmed for dual-priority call or call into two different master stations.
- Switch board to make custom sub-station interface
- Allows for three call in switches
- Connects to N-8400RS Sub-station interface unit via twisted pair wire and 25V speaker for half-duplex communication with assigned master station.
- Optional RS-481 handset may also be used

Optional Handset

RS-481

- Two-way, half-duplex communication using any 25V wall/ceiling speaker
- Prevents incoming calls by pushing a privacy switch

Model	RS-480	RS-470	RS-460	RS-450	RS-442
Call Button	Momentary (Emergency call: Press twice within 400 ms)				Call Button Wiring: 6 cables (for 3 momentary switches)
Rated Input	1W				
Internal Speaker	Cone-type				--
Internal Microphone	Electret condenser type				
Wiring	Twisted pair cables (2 pairs)				
Transmission Range	1 km (1093 yd)/ø0.5 mm (AWG24); 1.5 km (1640 yd)/ø0.65 mm (AWG22); 2 km (2187 yd)/ø0.9 mm (AWG19)				
Control Output	Open collector, Maximum controlled voltage: 30 V DC; Control current: 30 mA	--			Open collector, Maximum controlled voltage: 30 V DC; Control current: 30 mA
Dust/Water Protection	IP54		--		
Finish	Panel: Stainless steel, hairline Call button: Metal, silver Printed circuit board: Weather-resistant coating		Panel: Stainless steel, hairline Call button: Metal, silver	Panel: Stainless steel, hairline Call button: Resin, black	--
Dimensions	120(W) x 120(H) x 50.5(D)mm (4.72" × 4.72" × 1.9")	120 (W) x 120 (H) x 49.5 (D) mm (4.72" × 4.72" × 1.9")		120(W) x 120(H) x 41.5(D)mm (4.72" × 4.72" × 1.6")	--
Weight	575 g (1.27 lb)	550 g (1.21 lb)	540 g (1.19 lb)	510 g (1.12 lb)	140 g (0.31 lb)
Accessory	Box mounting screw (No.6-32UNC x 8) x 4, Box mounting screw (M4 x 25) x 4				--
Option	For flush mount: 2-gang electrical box: YC-302 For surface-mount: Indoor wall-mount box: YC-822 Outdoor wall-mount box: YC-823		For flush mount: 2-gang electrical box: YC-302 For surface-mount: Indoor wall-mount box: YC-822		--

Optional accessories on page 89.

N-8000 Series

N-8000 Series Optional Accessories

Wall-Mount Bracket
YC-850
- Designed to mount N-8000RS, N-8010RS, N-8400RS, N-8000DI, N-8000AF, N-8000AL and N-8000CO on a wall.

Wall-Mount Bracket
YC-280
- Designed to mount N-8000MS, N-8010MS, N-8020MS, N-8410MS, N-8510MS and N-8600MS on a wall.

Wall-Mount Bracket
YC-290
- Designed to mount N-8011MS on a wall.

Surface-Mount Back Box
YC-251
- Designed to mount N-8031MS on a wall.

Flush-Mount Back Box
YC-241
- Designed to surface-mount N-8031MS on a wall.

Flush-Mount Back Box
YC-150
- Designed to flush-mount N-8050DS and N-8640DS on a wall.

Back Box
YC-841
- Designed to flush-mount N-8033MS on a wall.

Surface-Mount Back Box
YS-13A
- Designed to surface-mount N-8050DS and N-8640DS on a wall.

Indoor Wall-Mount Box
YC-822
- Designed to mount RS-150, RS-160, RS-170, RS-180, RS-450, RS-460, RS-470 and RS-480 on a wall.

2-Gang Electrical Box
YC-302
- Designed to mount RS-150, RS-160, RS-170, RS-180, RS-450, RS-460, RS-470 and RS-480 on a wall.

Outdoor Wall-Mount Box
YC-823
- Designed to mount RS-170, RS-180, RS-470 and RS-480 on a wall.

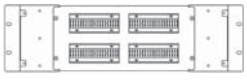
AC Adapter
AD-1215P
- The AD-1215P is an AC adapter to operate the IP Station on AC.

Rack Mounting Bracket
MB-15B-BK
- Rack mounting bracket kit for one N-8000/AG/AL/CO (1 RU)

Rack Mounting Bracket
MB-15B-J
- Rack mounting bracket kit for two N-8000/AG/AL/CO (1 RU)

N-8000RS Adapter
Q-N8000LC
- Conversion adapter for N-8000RS or N-8010RS.
- Select between speaker, RS station or line level

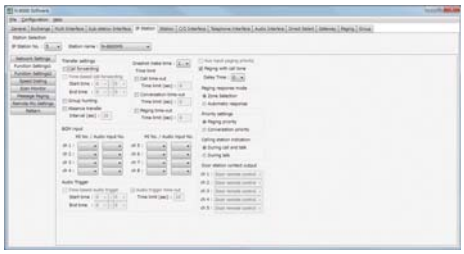
Terminal Board Unit
E-7000TB
- Rack mountable terminal board designed exclusively for use with the N-8000 Packet Intercom System (IP network compatible intercom). Up to 40 stations can be connected to the E-7000TB.



N-8000 System Software

Setting software

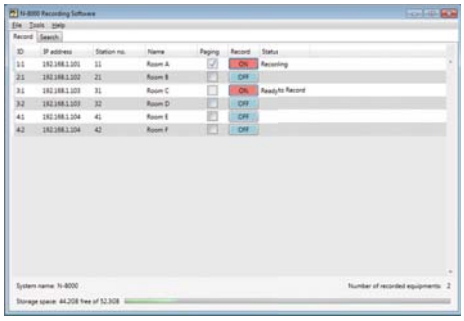
The network settings and the detection of the equipment connected to the local network can be set. The paging system settings, advanced settings of functions for each individual equipment and settings for the whole system can also be adjusted.



[System Requirements]
OS: Windows® XP Professional SP2 or later/Vista Business/7 Professional
CPU: Pentium® 4 2 GHz or faster
Memory: 1 GB or more
Required component: Microsoft® .NET Framework 3.5 SP1 or later, and Microsoft® SQL Server 2005 Express Edition

Recording software

Telephone calls, paging, and 3-Party Conference on the N-8000 system and recording of the voice during the Scan Monitor can be managed as a wav format. After selecting the recording subjected equipment, recording related settings can be adjusted. It is possible to easily search the recorded audio files and also to export the audio files to an external storage.

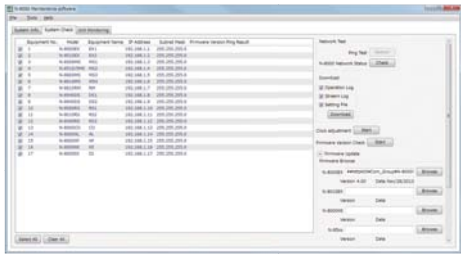


[System Requirements]
OS: Windows® 7 Professional SP1(32/64bit)
Screen resolution: Over 1024 × 768 pixels
Required component: Microsoft® .NET Framework 4

[Recommended Specifications]
CPU: Intel® Core® i5-2400 CPU @3.10GHz or faster
Memory: 4 GB or more
Free Hard Disk Space: 100GB or more
(About 2.7 GB is used per sound source at 24-hour continuous recording)

Maintenance software

This software displays the equipment name, station number, station name, etc. of individual equipment components within the system in the form of an at-a-glance list. System check function is used to confirm equipment firmware versions, update firmware, check connections between a PC and equipment components and between components, download various equipment log and setting files, and perform equipment clock settings. Although the above functions can be done on the browser, use of the N-8000 Maintenance Software permits such functions to be performed simultaneously for multiple components. Moreover, it displays the operation status of individual components in real time. Equipment operation logs can also be automatically saved to a designated file on the PC.



[System Requirements]
OS: Windows® XP SP2 or later
Required component: Microsoft® .NET Framework 3.5 SP1 or later
Screen resolution: Over 800 x 600 pixels

[Recommended Specifications]
OS: Windows® Vista Business/7 Professional
CPU: Pentium® 4, 2 GHz or faster
Memory: 2 GB or more
Screen resolution: Over 1024 x 768 pixels

*Microsoft, Windows XP, Windows Vista, Windows 7 and .NET Framework are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
*Intel, Pentium and Intel Core are either trademarks of Intel Corporation in the United States and/or other countries.
*By use of different software, it is possible to configure for a large amount of telephone calls. For more information, please contact your nearest dealer.

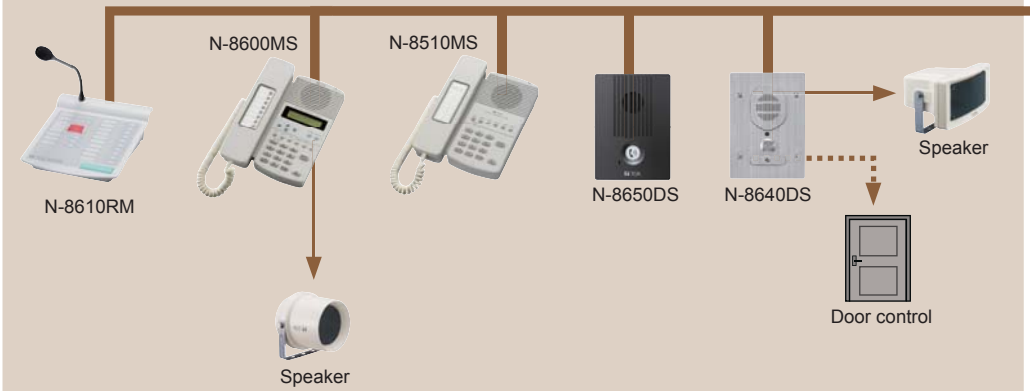
SDK

TOA Canada is now offering software developers a software development tool for the N-8000 Intercom in the form of an SDK. With the SDK, a software developer will be able to create and/or interface the N-8000 platform into existing or newly developed software. Also supplied with the SDK will be an SDK application example, SDK user manual and the N-8000 protocol.

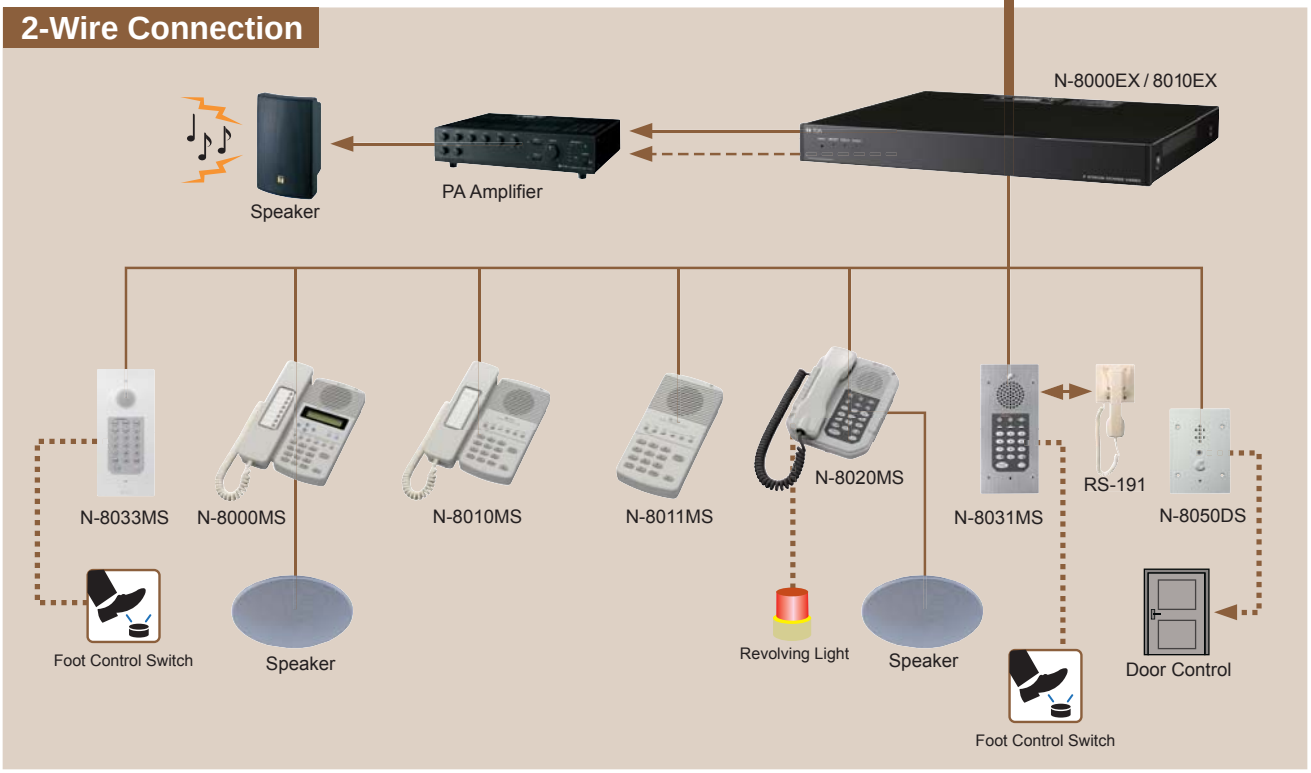
Please contact TOA Canada to obtain the SDK and support files. technicalsupport@toacanada.com or 1-800-263-7639

N-8000 Series System

Direct Network Connection



2-Wire Connection



System Specifications

LAN Connections
Max. 192 units (total no. of Exchanges, Interface Units and IP stations)

Station Connections
Max. 3,072 stations (16 stations connected to each of 192 Exchanges)

Voice Links
Max. 768 links (4 links for each of 192 connected N-8000EX Exchanges)

Paging
Zones
Max. 192 zones

Paging Outputs
Max. 384 outputs (2 outputs for each of 192 connected N-8000 Exchanges or Multi-Interface units)

BGM
Max. 8 channels (number of channels selectable from a station)

PBX Interface
Max. 384 units (2 units for each of 192 connected Multi-Interface units)

Tie-Line Interface
Max. 384 units (2 units for each of 192 connected Multi-Interface units)

Outside-Line Interface
Max. 192 units

Telephone Interface
Max. 192 units (when 192 Telephone Interface units are connected)

External Contact Output
N-8000MI
Max. 3,072 (16 outputs for each of 192 connected Multi-Interface units)
N-8000DI
Max. 6,144 (32 outputs for each of 192 connected Direct Select units)
N-8000AF
Max. 1,536 (8 outputs for each of 192 connected Audio Interface units)

External Contact Input
N-8000MI
Max. 3,072 (16 inputs for each of 192 connected Multi-Interface units)
N-8000DI
Max. 6,144 (32 inputs for each of 192 connected Direct Select units)
N-8000AF
Max. 1,536 (8 inputs for each of 192 connected Audio Interface units)

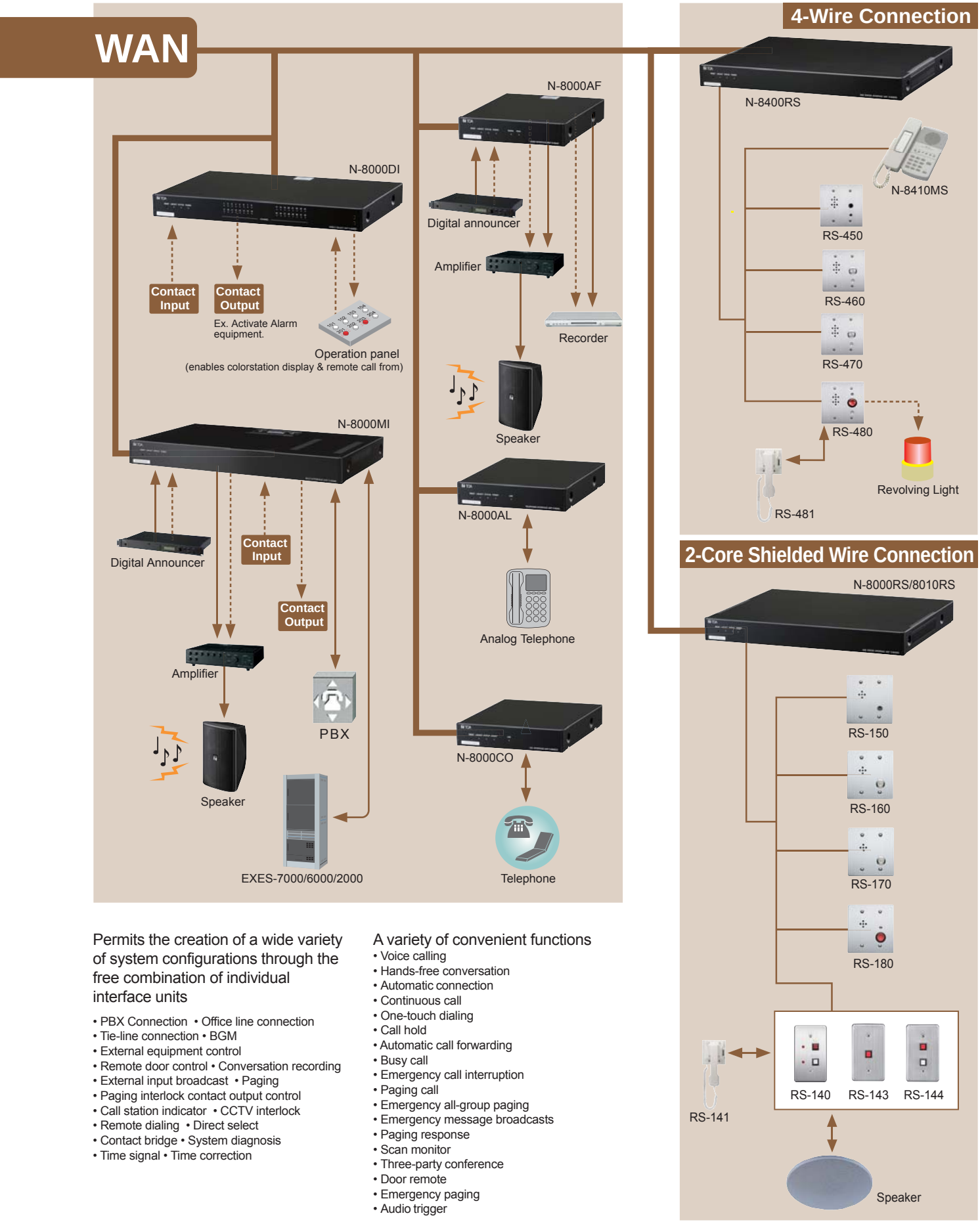
[Network Relations]
Audio Delay Time
80 ms/320 ms; changeable

Connection Delay Time
Max. 1 second (when 191 multicast paging destinations are set)

Bandwidth Used
Max. 2.08 Mbps (one-way)/ unicast paging to 16 locations

Max. 130 Kbps (two-way)/per call

N-8000 Series System



Permits the creation of a wide variety of system configurations through the free combination of individual interface units

- PBX Connection • Office line connection
- Tie-line connection • BGM
- External equipment control
- Remote door control • Conversation recording
- External input broadcast • Paging
- Paging interlock contact output control
- Call station indicator • CCTV interlock
- Remote dialing • Direct select
- Contact bridge • System diagnosis
- Time signal • Time correction

A variety of convenient functions

- Voice calling
- Hands-free conversation
- Automatic connection
- Continuous call
- One-touch dialing
- Call hold
- Automatic call forwarding
- Busy call
- Emergency call interruption
- Paging call
- Emergency all-group paging
- Emergency message broadcasts
- Paging response
- Scan monitor
- Three-party conference
- Door remote
- Emergency paging
- Audio trigger

Voice Evacuation & Mass Notification

Voice Evacuation Systems

Introducing a scalable new system for configuring versatile and highly effective PA applications. The SX-2000 Series is in compliance with the EN 54 Standard, and features new matrixing capabilities, so a single system can have its components distributed in different locations, yet under centralized control. Ideal for large-scale installations ranging over multiple buildings as well as local systems, the versatile SX-2000 Series is particularly well-suited for airports and railway stations, factories, shopping malls and large offices. Versatility is ensured by such features as a dual power source and redundant backups for fail-safe operation, making it a cost-effective solution for virtually any installation, and without long lead times or the expense of a custom system. A first responders microphone feature is also included, for enhanced effectiveness in an emergency. SX-2000 Series components enable creation of an ideal system for all sorts of application requirements.

SX-2000 Series Audio Management System

System Manager

SX-2000SM

- Used in combination with an optional audio input unit audio output unit and remote microphone
- Performs audio signal routing and priority control for the entire system
- Equipped with 8 control inputs, 8 control outputs, failure status outputs, failure data inputs/switches, access indicators, mode indicators and failure indicators
- Memory storage for 32 message files

Audio Input Unit

SX-2100AI

- It features modular construction that allows it to handle from two to eight inputs per unit
- Audio signals are transmitted digitally to the audio output unit, but an analog audio output function (1 channel) enables simultaneous all-zone calls for use in emergency situations.

Audio Output Unit

SX-2100AO

- 8 outputs, 600 ohms balanced
- Two channels of local audio inputs
- Includes an amplifier switching function that automatically switches the power amplifier to the standby amplifier if the power amplifier fails, and a surveillance function that self-diagnoses the speaker lines.

Audio Output Unit

SX-2000AO

- One control IN/OUT interface allows the number of control inputs and outputs to be increased.
- It is equipped with an emergency audio input and a 24 V emergency cutoff input
- Has two power inputs and can support a dual-redundant power supply system.

Control Input Unit

SX-2000CI

- Equipped with 32 control input channels.
- Control input line failure can be detected by connecting resistors to its line.
- Has a function to supply a stabilized 24 V DC.

Control Output Unit

SX-2000CO

- Equipped with 32 control output channels.
- The indicators on the front panel monitor the control output line status.
- Control output status when the CPU turns off can be set.

Power Amplifier

VP-2064
VP-2122
VP-2241
VP-2421

- Features a 240 W-by-1 channels configuration
- Uses the VM-3000 Series Power Amplifier Module per channel
- Requires VP-200VX - VP amplifier input module

First Responder Microphones & Accessories on page 96, Modules on page 97

SX-2000 Series Audio Management System

Model No.		SX-2000SM System Manager
Power Source		24V DC, 2 power inputs construction enables dual- redundant power supply. (Operational range: 20V - 40V DC)
Current Consumption		Under 0.8A (when operated on 24V DC)
SX Link	Network I/F Matrix System Specification	2 × 100BASE-TX circuits, RJ45 connector Bus: 16 Audio input: Max. 64 ch, Audio output: Max. 256 zones Contact input: Max. 1416, Contact output: Max. 1416 Priority control: 512 steps Event log: Max. 1,000 events × 32 files Failure log: Max. 100 events × 32 files
	Matrix System Configuration (Maximum connectable units)	SX-2000AI/2100AI: Max. 8 units, SX-2000AO/2100AO: Max. 32 units, SX-2000CI: Max. 32 units, SX-2000CO: Max. 32 units, RM-200SA: Max. 64 units (up to 8 RM-200SA per SX-2100AI)
	Connection Cable/Device	Shielded Category 5 twisted pair cable (CAT5-STP)
LAN	Network I/F	1 × 10 BASE-T/100 BASE-TX circuit, RJ45 connector for maintenance use
	Network Protocol	TCP/IP
	Connection Cable	Shielded Category 5 twisted pair cable for LAN (CAT5-STP)
Analog Link	Input/Output Connector	Output: 2, RJ45 connector
	Connection Cable	Shielded Category 5 twisted pair cable (CAT5-STP)
DS Link	Usable Unit	VX-2000DS
	Connector/Cable	2 interface, RJ45 connector, Shielded Category 5 twisted pair cable (CAT5-STP)
Failure Data Input		3 inputs (ACK/RESET/LAMP TEST)
Failure Data Output		4 outputs (CPU FAULT/GENERAL FAULT/CPU OFF/BUZZER)
Control Input		8 inputs
Surveillance Section for The Control Input Lines		Connection resistance to make the function inactive: 20kΩ ±5% Connection resistance to make the function active: 10kΩ ±5% Connector cable: Twisted pair cable (shielded type is recommended) Maximum cable distance: 10m
Control Output		8 outputs
24V DC Output	Maximum Feeding Current	100mA
	Output Voltage	24V DC ±10% or less
Memory Card		Insertion slot: 1 (supplied CF card (128MB))

Model No.		SX-2100AI Audio Input Unit
Power Source		24V DC, 2 power inputs construction enables dual- redundant power supply. (Operational range: 20V - 40V DC)
Current Consumption		Under 1.5A (when operated on 24V DC)
Audio Input		8 inputs, module construction (max. 4 modules)
Control Input		16 inputs
Control Output		16 outputs
Audio Input Characteristic		Sampling frequency: 48kHz
SX Link	Network I/F	2 × 100BASE-TX circuits, RJ45 connector
	Connection Cable/Device	Shielded Category 5 twisted pair cable (CAT5-STP).
Analog Link	Input/Output Connector	Input: 1 input, RJ45 connector Output: 1 output, RJ45 connector
	Connection Cable	Shielded Category 5 twisted pair cable (CAT5-STP)

Model No.		SX-2100AO Audio Output Unit
Power Source		24V DC, 2 power inputs construction enables dual- redundant power supply. (Operational range: 20V - 40V DC)
Current Consumption		Under 1.2A (when operated on 24V DC)
PA Link	Audio Output	8 outputs and standby AMP, 0dB*, suitable load: 600Ω or above, electronically-balanced, RJ45 connector
	Audio Output Characteristic	Frequency response: 20 – 20kHz Sampling frequency: 48kHz D/A converter: 24 bit
	Connection Cable	Shielded Category 5 twisted pair cable (CAT5-STP)
Local Audio Input		
	Audio Input	2 inputs, 0dB*, 10kΩ, electronically-balanced, RJ45 connector
	Audio Input Characteristic	Frequency response: 20 – 20kHz Sampling frequency: 48kHz D/A converter: 24 bit
	Control Input	2 inputs
	Connection Cable	Shielded Category 5 twisted pair cable (CAT5-STP)
SX Link	Network I/F	2 × 100 BASE-TX circuits, RJ45 connector
	Connection Cable	Shielded Category 5 twisted pair cable (CAT5-STP)
Analog Link	Input/Output Connector	Input: 1 input, RJ45 connector/Output: 1 output, RJ45 connector
	Connection Cable	Shielded Category 5 twisted pair cable (CAT5-STP)
DS Link	Usable Unit	VX-2000DS
	Connector/Cable	2 interface, RJ45 connector, Shielded Category 5 twisted pair cable (CAT5-STP)
CI/CO Link	Usable Unit	SX-2000CI or SX-2000CO
	Connector/Cable	1 interface, RJ45 connector, Shielded Category 5 twisted pair cable (CAT5-STP)
Speaker Line Failure Detection Section		
	Connection Cable	Removable terminal block, SP/AMP: 8 pins, STANDBY AMP: 2 pins, AWG 24 – AWG 16
	Maximum Input	100Vrms, 5Arms
	Fault Detection System	Short circuit, open circuit, ground fault
	Method	Impedance or End of line
	End of Line	In case of normal: Terminated by 470kΩ between the speaker line and the shielded In case of open: Opened between the speaker line and the shield
	Impedance	Minimum load: 2kΩ (5W) at 100V line
Control Input		8 inputs
Control Output		8 outputs

*0dB = 1V

First Responder Microphones & Accessories on page 96, Modules on page 97

SX-2000 Series

Model No.		SX-2000AO Audio Output Unit
Power Source		24V DC, 2 power inputs construction enables dual- redundant power supply. (Operational range: 20V - 40V DC)
Current Consumption		Under 0.79A (when operated on 24V DC)
Audio Output		8 outputs, 0dB*, suitable load: 600Ω or above, electronically-balanced output changeable into transformer-balanced output (optional)
Audio Output Characteristic		Frequency response: 20 – 20kHz Sampling frequency: 48kHz D/A converter: 24 bit
Emergency Line Input		Emergency signals switched and sent to Input 1 (H, C, E) by relay
Emergency-Cutoff 24V Input		1 input, input current: under 5mA
SX Link	Network I/F	2 × 100 BASE-TX circuits, RJ45 connector
	Connection Cable/Device	Shielded Category 5 twisted pair cable (CAT5-STP)
Analog Link	Input/Output Connector	Input: 1 input, RJ45 connector/Output: 1 output, RJ45 connector
	Connection Cable	Shielded Category 5 twisted pair cable (CAT5-STP)
CI/CO Link	Usable Unit	SX-2000CI or SX-2000CO
	Connection Cable	1 interface, RJ45 connector, Shielded Category 5 twisted pair cable (CAT5-STP)
Control Input		8 inputs
Control Output		8 outputs

*0dB = 1V

Model No.		SX-2000CI Control Input Unit
Power Source		24V DC (operational range: 20V – 40V DC) (Operational range: 20V - 40V DC)
Current Consumption		0.7A or less (maximum value in the power operating range) 0.55A or less (when operated on 24V DC)
Control Input		32 inputs, no-voltage make contact input, open voltage: 24V DC, short-circuit current: 2mA, photo coupler input, removable terminal block (16 pins)
Surveillance Section for The Control Input Lines		Connection resistance to make the function inactive: 20kΩ ±5% Connection resistance to make the function active: 10kΩ ±5% Connector cable: Twisted pair cable (shielded type is recommended) Maximum cable distance: 10m (32.81 ft)
CI/CO Link	Input/Output Connector	Input: 1 input, Output: 1 output RJ45 connector
	Connection Cable	Shielded Category 5 twisted pair cable (CAT5-STP) (1 pair of data wire + 1 pair of control wire)
24V DC Output	Output Voltage	24V DC ±10% or less
	Maximum Feeding Current	100mA
	Connector	Removable terminal block (2 pins)
When operating in stand-alone mode with SX-2000CO		
Priority Control		No priority control, Terminal number-based priority, Last-in-first-out priority and First-in-first-out priority
Connection Cable	Main cable	Shielded CPEV cable* or STP Category 5 straight cable * When connecting the power supply to each unit: 1 pair for data line When connecting the power supply only to the SX-2000CI: 1 pair data line and 2 pairs power line for a redundant power supply system, or 1 pair data line and 1 pair power line for a non-redundant power supply system
	Brach cable	STP Category 5 straight cable (with RJ45 connectors)
Maximum Cable Distance		800m
Maximum Delay Time		300ms

Model No.		SX-2000CO Control Output Unit
Power Source		24V DC, 2 power inputs construction enables dual- redundant power supply. (Operational range: 20V - 40V DC)
Current Consumption		Under 0.29A (when operated on 24V DC)
Control Input		32 outputs
CI/CO Link	Input/Output Connector	Input: 1 input, Output: 1 output RJ45 connector
	Connection Cable	Shielded Category 5 twisted pair cable (CAT5-STP)
When operating in stand-alone mode with SX-2000CI		
Connection Cable	Main cable	Shielded CPEV cable* or STP Category 5 straight cable * When connecting the power supply to each unit: 1 pair for data line When connecting the power supply only to the SX-2000CI: 1 pair data line and 2 pairs power line for a redundant power supply system, or 1 pair data line and 1 pair power line for a non-redundant power supply system
	Brach cable	STP Category 5 straight cable (with RJ45 connectors)
Maximum Cable Distance		800m
Maximum Delay Time		300ms

Model	VP-2064 / VP-2122 / VP-2241 / VP-2421
Power Source	28V DC (Operational range: 20V - 40V DC)
Current Consumption (at 1/8 rated output)	**VP-2064/VP-2122:** 4.8A in total, **VP-2241:** 4.8A, **VP-2421:** 7.6A
Impedance	**VP-2064:** 167Ω (100V), 83Ω (70V), 41Ω (50V) **VP-2122:** 83Ω (100V), 41Ω (70V), 21Ω (50V) **VP-2241:** 41Ω (100V), 21Ω (70V), 10Ω (50V) **VP-2421:** 24Ω (100V), 12Ω (70V), 6Ω (50V)
Rated Output	**VP-2064:**60W × 4, **VP-2122:**120W × 2, **VP-2241:** 240W × 1, **VP-2421:** 420W × 1
Number of Module Slot	**VP-2064:** 4, **VP-2122:** 2, **VP-2241/VP-2421:** 1
Frequency Response	40 – 16kHz
Distortion	Under 1%
S/N Ratio	Over 80dB

First Responder Microphones & Accessories on page 96
Modules on page 97

SX-2000 Series First Responder Microphones & Optional Accessories

First Responder Microphone

RM-200SF

- Equipped with an Emergency key, permitting it to be used as a remote microphone for emergency broadcast.
- Zone selection and microphone announcement can be made at the time of emergency broadcast.
- Offers a surveillance function to detect failures including microphone element failure.

Remote Microphone

RM-200SA

- Equipped with 13 function switches
- Can be used to select individual zones or zone groups a covered switch and corresponding indicators
- An external microphone input terminal is provided to allow using a headset microphone, along with built-in internal compressor circuitry
- TALK button may be a PTT or lock-type
- Emergency activation button is equipped with a cover

Terminal Unit

RM-200RJ

- Designed to convert the RJ45 connector into a screw terminal block
- Used to connect between a trunk cable and a feeder cable in wiring a remote microphone
- Built-in indicator shows the voltage status of DC power cable

Remote Microphone Extension Unit

RM-210

- Up to four remote microphones can be connected to a remote microphone

Emergency Power Supply Unit

VX-2000DS

- Supplies DC power to equipment
- Supports 2x/2v battery units for backup supply
- Distribution for 6 DC units

External Power Supply

RCP-1000-24

- SX-2000 power supply
- Optional rack kit available: RCP-1UI

External Power Supply Rack Kit

RCP-1UI

- SX-2000 power supply rack kit

Model No.	RM-200SF First Responder Microphone
Power Source	24V DC (supplied from the SX-2100AI audio input unit)
Current Consumption	Under 240mA
Audio Output	0dB*, transformer-balanced
Distortion	Under 1%
Frequency Response	200 – 15kHz
S/N Ratio	Over 55dB
Microphone	Unidirectional dynamic microphone with talk key, AGC (ON/OFF selectable), microphone element failure detectable by using a built-in small oscillator
Connection Cable	Shielded CPEV cable or Shielded Category 5 twisted pair cable (CAT5-STP)
No. of Connectable Expansion	Max. 5 units
Monitor Speaker	Built inside
Operation	Emergency key, Function keys, CPU switch, Reset switch
Indicator	Status indicators, Power indicator, Failure indicator, CPU indicator, Selection indicators, Microphone indicator, Broadcast status indicator
Dimensions	200 (W) × 215 (H) × 95 (D)mm

*0dB = 1V

Model No.	RM-200SA Remote Microphone
Power Source	24V DC (supplied from the SX-2100AI audio input unit) or DC input power supply connector (when the optional AD-246 power supply unit used)
Current Consumption	Under 240mA
Audio Output	0dB*, 600Ω, balanced
External Microphone Input	–40dB*, 2.2kΩ, unbalanced, mini jack
Distortion	Under 1%
Frequency Response	100 – 20kHz
S/N Ratio	Under 60dB
Microphone	Unidirectional electret condenser microphone with AGC (ON/OFF selectable)
Chime	Built inside, monitoring possible using built-in speaker
Level Control	Microphone sensitivity control, Monitor speaker volume control, Chime (adjustable using the software)
Connection Cable	Main line: Shielded CPEV cable or Shielded Category 5 twisted pair cable (CAT5-STP) Branch line: Shielded Category 5 twisted pair cable (CAT5-STP)
No. of Connectable Expansion	Max. 4 units
Monitor Speaker	Built inside
Indicator	Power indicator, Failure indicator, Function switch indicator, Covered switch indicator, Broadcast switch indicator
Dimensions	190 (W) × 76.5 (H) × 215 (D)mm (excluding microphone)

*0dB = 1V

Model No.	RM-210 Remote Microphone Extension
Current Consumption	20mA max. (in terms of RM-200SF/200SA's DC power input)
Connection	Connection by way of dedicated cable
Number of Function Keys	10
Dimensions	110 (W) × 76.5 (H) × 215 (D)mm

Model	VX-2000DS
Power Source	AC mains, 50/60Hz
Power Consumption	240W max.
Charging Method	Trickle charging
Charging Current	5A max.
Charging Output Voltage	27.3V ±0.3V
Power Supply Input	6
DC Power Output	6

SX-2000 Series Audio Management System

SX-2000 Series Modules

Remote Microphone Interface Module

SX-200RM

- Dedicated remote microphone module for the audio input unit
- Can be used to connect two remote microphones
- Input sensitivity can be adjusted using the knobs located near the RJ45 connector

Stereo Select Input Module

D-936R

- Four stereo connector pairs
- Unbalanced line level
- Individual input gain
- Programmable switching between connector pairs or summing mode
- Occupies two input channels
- RCA pin jack connectors

Mic/Line Input Modules (24 bits Monaural Type)

D-921F

- Two balanced mic or line level inputs
- 24-bit A/D converters
- Adjustable input gain
- Phantom power
- XLR-F connectors

Mic/Line Input Module (24 bits Monaural Type)

D-921E

- Two balanced mic or line level inputs
- 24-bit A/D converters
- Adjustable input gain
- Phantom power
- Phoenix-style terminal block

Mic/Line Input Module (20 bits Monaural Type)

D-922F

- Two balanced mic or line level inputs
- 20-bit A/D converters
- Adjustable input gain
- Phantom power
- XLR-F connectors

Mic/Line Input Module (20 bits Monaural Type)

D-922E

- Two balanced mic or line level inputs
- 20-bit A/D converters
- Adjustable input gain
- Phantom power
- Phoenix-style terminal block connectors

IP Interface Module

SX-200IP

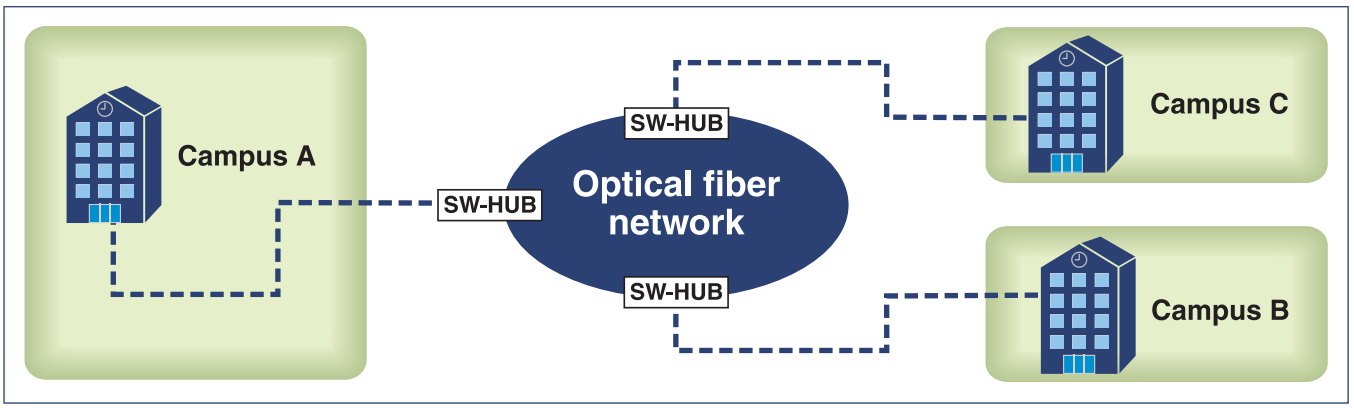
- 10BASE-T/100BASE-TX (Automatic-Negotiation)
- Voice sampling frequency of 16 kHz, 8 kHz (controllable on the software); 48 kHz, sample rate is used for SX-2000 system only
- Voice encoding method - Sub-band ADPCM, Cryptosystem
- Voice Packet Loss Recovery - Silence insertion
- Allows for a page to be made from the N-8000 Series Stations (N-8600MS, N-8610MS only) to the SX-2000 Series
- *see page 84 for spec chart.*

Power Amplifier Input Module

VP-200VX

- Designed to be used in conjunction with the VP-2064, VP-2122, VP-2241, VP-2421 power amplifier

Distributed Control System Example (University)



VM-3000 Series Integrated Voice Evacuation System

The VM-3000 Series is an Emergency Voice Paging System ideal for small and medium-sized applications. It is certified to UL2572 and ULC-S576 (VM-3240VA, VM-3240E, VX-2000DS and RM-200M). It incorporates such emergency functions as continuous speaker line monitoring and a built-in voice alarm. This easy-to-install system also offers PA broadcasting, paging and BGM functions that ensure consistently high intelligibility. The VM-3000 Series is digitally audio processed and controlled, and may be set up and operated directly by using the controls and LCD display on the front panel. A dedicated PC software configuration capability is also provided for establishing settings via LAN. The incorporation of wide-ranging functional capabilities, superb reliability and versatility make the VM-3000 a highly cost-effective emergency broadcast system.

»Voice Alarm System Amplifier

VM-3240VA

- Multifunction amplifier that comes with audio inputs including a background music input, and a speaker output section which has an internal attenuator and a 6-output selector.
- Permits not only general-purpose broadcast, but also Emergency broadcast which gives pre-recorded instructions in an emergency situation
- Features a surveillance function which automatically checks the system for failures.
- Emergency broadcasts can be made from am optional RM-300MF First Responder Microphone as well as from the amplifier, and can be remotely controlled from external equipment

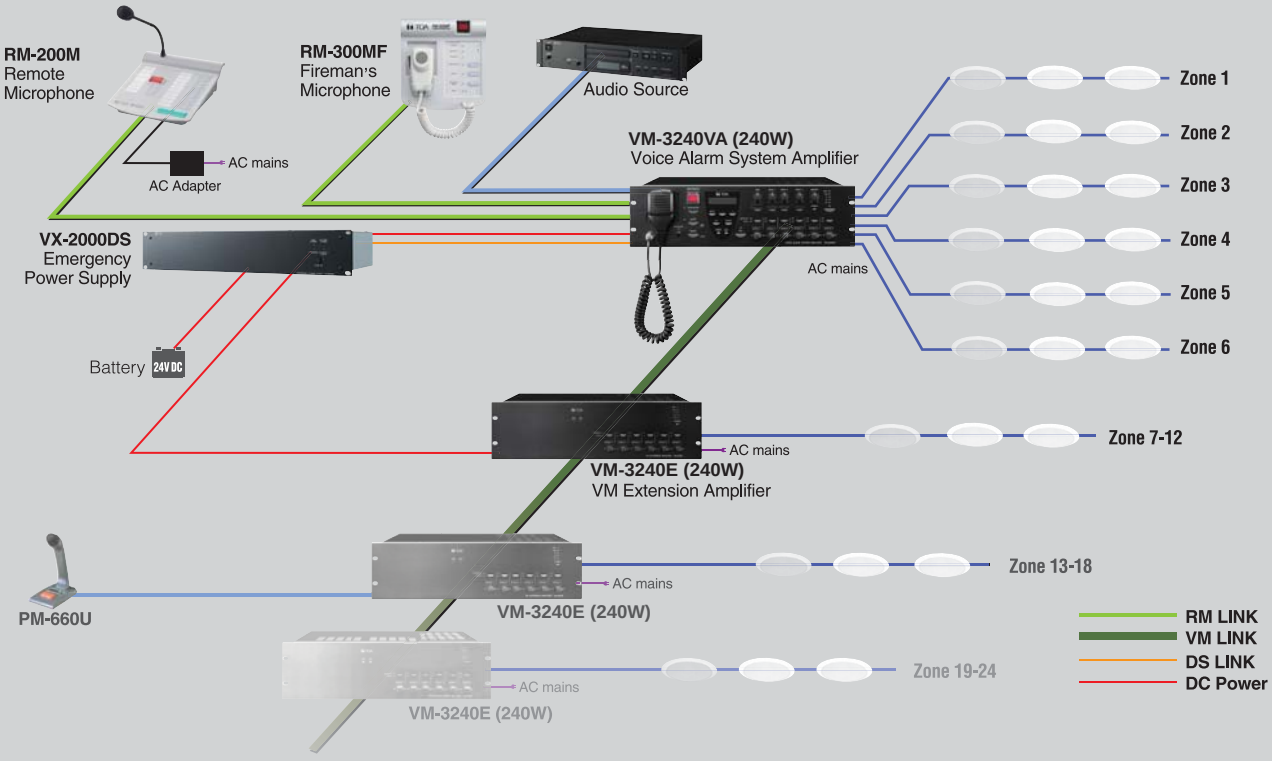
»VM Extension Amplifier

VM-3240E

- Adds additional zones to the VA system
- Local all-call paging

First Responder Microphones & Accessories on page 99

SYSTEM EXAMPLE



VM-3000 Series Integrated Voice Evacuation System

Model	VM-3240VA	VM-3240E
Power Source	120V AC, 50/60Hz	
Power Consumption	600 W (with rated output signals), 260 W (According to EN60065)	
Rated Output	240W	
Input	Input 1 – 3: -50dB* (dB (LINE) (changeable) combined XLR connector (female)/phone jack Input 4: -50dB* (MIC)/-10 dB (LINE) (changeable) 600Ω, electronically balanced removable terminal block (14 pins) BGM 1 – 2 : -10 dB, 10kΩ unbalanced, RCA pin jack External amplifier Input: 70V Line removable terminal block (14 pins)	600Ω, electronically balanced Local input: -50dB* (MIC)/-10dB* (LINE) External amplifier input: 70V line, removable terminal block (14 pins)
Output	70V, high impedance, speaker output 1 – 6: Total within 240W, removable terminal block (14 pins) Direct output : Direct output from internal or external amplifier, removable terminal block (16 pins) Recording output BGM / Paging: 0dB*, 10kΩ, unbalanced, RCA pin jack	70V, high impedance, speaker output 1 – 6: Total within 240W, removable terminal block (14 pins) Direct output : Direct output from internal or external amplifier, removable terminal block (16 pins)
RM Link	Input 1 – 2: Connecting the RM-300MF/RM-200M Remote Microphone. RJ45 female connector Link cable: Category 5 Shielded Twisted-Pair straight cable (CAT5-STP	--
Network I/F	10 BASE-T/100 BASE-TX (selectable by automatic negotiation), RJ45 female connector Link cable: Category 5 Shielded Twisted-Pair straight cable (CAT5-STP)	--
General Control	Input 1 – 8: No-Voltage make contact input, open voltage: 24V DC, short-circuit current: under 2mA, removable terminal block (14 pins) Output 1 – 8: Isolated open collector output, withstand voltage: 30V DC, operating current: under 10mA, removable terminal block (14 pins)	
Emergency Control	Input 1 – 5: No-Voltage make contact input, open voltage : 24V DC, short-circuit current: under 2mA, RJ45 female connector Input 6: Isolated voltage input: Inactive; -24V ±20%/Active; +24V ±20%, RJ45 female connector Status out: Relay contact output, withstand voltage: 40V DC, operating current: 2 – 300mA, RJ45 female connector	
ATT Control	Relay contact 1 – 6, 125V AC or 30V DC, total under 5A, removable terminal block (16 pins)	
Dimensions	482 (W) x 132.6 (H) x 431.2 (D) mm (18.98" x 5.22" x 16.98")	482 (W) x 132.6 (H) x 407 (D) mm (18.98" x 5.22" x 16.02")
Weight	16.5 kg (36.38 lbs)	
Accessory	Power cable (2m) × 1, Setting software (CD) × 1, Link cable (3m) × 2, Plastic foot × 4, Plastic foot mounting screw × 4, Emergency microphone × 1,Removable terminal plug (14 pins) × 3, Removable terminal plug (16 pins) × 1	Power cable (2m) × 1, Link cable (3m) × 2, Plastic foot × 4, Plastic foot mounting screw × 4, Removable terminal plug (14 pins) × 3, Removable terminal plug (16 pins) × 1
Option	Input transformer: IT-450	

*0 dB = 1V

VM-3000 Series First Responder Microphones & Optional Accessories

First Responder Microphone

RM-300MF

- Equipped with an emergency activation button, permitting pre-recorded evacuation and alert announcements to be activated, and microphone announcements to be made in emergency situations

Remote Microphone

RM-200M

- Up to four remote microphones can be connected but the maximum connection length for all cables is approximately 800 meters
- Emergency activation button is equipped with a cover in case of accidental selection
- An external microphone input terminal is provided to allow using a headset microphone, along with built-in internal compressor circuitry
- TALK button may be a PTT or lock-type

First Responder Microphone Extension

RM-320F

- By connecting the RM-320F Fireman's Microphone Extension to the RM-300MF, the number of function buttons can be expanded
- Zone selection or failure acknowledgement function can be assigned to such function keys.

Remote Microphone Extension Unit

RM-210

- Up to four can be connected to a remote microphone for up to 50 zone selection buttons
- Emergency activation button is equipped with a cover

Emergency Power Supply Unit

VX-2000DS

- Manages DC power to equipment
- Supports 2 x 12 V sealed lead batteries fully charged
- DC distribution for up to 6 units
- *See page 96 for specs.*

Input Transformer

IT-450**

- Used for electrical isolation of the audio inputs

** Special Order Product

Software

- Used to configure settings, not required for daily operation.
- Software can be downloaded from www.TOAcanada.com

VM-3000 Series Integrated Voice Evacuation System

Model	RM-300MF	RM-320F
Power Source	24V DC (operating range: 15 – 40V DC, supplied from the VM-3000 system or VX-2000DS.)	--
Current Consumption	120mA (RM-300MF), 660mA (with 3 RM-320F connected)	180mA max. (RM-320F)
Frequency Response	200 – 15,000 Hz	--
Distortion	Under 1%	--
S/N Ratio	Over 55 dB	--
Microphone	Unidirectional dynamic microphone with talk key, compressor (on/off switchable)	--
Volume Control	Microphone volume control / Buzzer volume control	--
Connection Cable	Main line: shielded CPEV cable (each one pair of Audio line, Data line, Power supply line) or Category 5 Shielded Twisted-Pair cable for LAN (CAT5-STP), M3 screw terminal	--
No. of Connectable RM-320F	Max. 3 units	--
No. of Function Keys	--	20
Operation	Emergency key, Evacuate key, Alert key, Emergency reset key, CPU switch, Reset switch	--
Finish	ABS resin, blueish gray	ABS resin, blueish gray
Dimensions	200 (W) x 215 (H) x 82.5(D) mm (7.87" x 8.46" x 3.25")	175(W) x 215(H) x 70(D)mm (6.89"x8.46"x 2.76")
Weight	1.1 kg (2.43 lbs)	700 g (1.54 lbs)
Accessory	Wall mounting bracket unit x 1, Wall mounting screw x 2, Electrical box mounting screw x 2	Wall mounting bracket x 1, Wall mounting screw x 2

Model	RM-200M	RM-210
Power Source	24V DC (operating range: 14 – 28V DC) Power input jack: Non-polarity type Usable power input plug*2: Outer diameter ø5.5mm, inner diameter: ø2.1mm, length: 9.5mm	--
Current Consumption	120mA (RM-300MF), 660mA (with 3 RM-320F connected)	20mA max. (in terms of RM-2000M's DC power input)
Audio Output	0dB*: 600Ω, balanced	--
Frequency Response	100 – 20,000 Hz	--
Distortion	Under 1%	--
S/N Ratio	Over 60 dB	--
Microphone	Unidirectional electret condenser microphone	--
Volume Control	Microphone volume control	--
Connection Cable and Connection	Category 5 Shielded Twisted-Pair cable, RJ45 connector	--
No. of Function Keys	10	10
Finish	ABS resin, blueish gray	ABS resin, blueish gray
Dimensions	190 (W) x 76.5 (H) x 215 (D) mm (7.48" x 3.01" x 8.46") (Gooseneck microphone excluded)	175(W) x 215(H) x 70(D)mm (6.89"x8.46"x 2.76")
Weight	750 g (1.65 lbs)	350 g (0.77 lbs)
Accessory	CATS cable x 1	CATS cable x 1
Option	Wall mounting bracket: WB-RM200	Wall mounting bracket: WB-RM200

Integrated Voice Evacuation System

The VM-2000 Series represents a highly cost-effective solution for building management and owners. Designed specifically for effective communications in a building, VM-2000 Series units are not conventional power amplifiers with just a few added features. They're optimized to deal with emergency situations to alert building occupants as well as routine announcements and BGM. An indispensable part of building and design management today, communications infrastructures can effectively reach various audiences through paging, calls routed to selected areas and priority emergency announcements for the entire building.

»» System Management Amplifier

VM-2120 L**

»» System Management Amplifier

VM-2240 L

- The unit comes with 4 audio inputs including the background music input, and the speaker output section which has an internal attenuator and 5-zone selector.
- It permits not only general-purpose broadcast, but also Emergency Broadcast based on the EN60849 Standard which gives pre-recorded voice instructions(*1) in the emergency situation.
- Broadcast can be made from an optional RM-200M Remote Microphone as well as from the amplifier, and can be remotely controlled from external equipment.
- The unit features the surveillance function(*2) which automatically checks the system for failures.

*(*1) An optional EV-200M Voice Announcement Board is required.*
*(*2) An optional SV-200MA Surveillance Board is required.*

** Special Order Product

Microphones & Accessories on page 101

Integrated Voice Evacuation System

Model No.	VM-2120	VM-2240
Power Requirement	AC: mains, 50/60 Hz	AC: mains, 50/60 Hz
Rated Output	120 W	240 W
Frequency Response	50 – 16,000 Hz	
Distortion	Under 1%	
Signal-to-Noise Ratio	Over 60 dB	
Tone Control	Bass:100 Hz ±10 dB, Treble: 10 kHz ±10 dB	
Input	Inputs 1 – 3 Telephone paging input BGM 1 - 2 Power amplifier input External speaker line input	
Output	Speaker output Direct speaker line output Line output Recording output Preamplifier output	
Control Input and Output	(1) External control input •Activation of messages •Activation of power •Activation and stop of Emergency Broadcast •Unit's broadcast cutoff (when activated by an external emergency equipment) (2) Status output •Irregularity of communications with the Remote Microphone and an expansion amplifier •AC power condition •DC power condition •Irregularity of the sound source of the Voice Announcement Board •Failure (FAULT) indication on •Power switch on	
External Attenuator Control Output	Plug-in screw connector, relay, no-voltage make contact output, transfer type, withstand voltage: 30 V DC, 125 V AC, contact current: under 7 A (DC), under 7 A (AC)	
Surveillance Input and Output	Input: No-voltage make contact input, open voltage: 3.3 V DC, short-circuit current: under 1 mA Output: Open collector output, withstand voltage: 30 V DC, control current: under 10 mA	
Chime Tone	Built-in chime	
Function	Two units stacking (VM-2120 or VM-2240) Emergency broadcast (sequential control) Broadcast priority control Surveillance (failure detection) function Power supply to only one Remote Microphone (RM-200M) Line resistance: Under 24 Ω (one way)	
Dimensions	419 (W) ×143.3 (H) × 355.7 (D) mm [16.5" (W) x 5.7" (H) x 14" (D)]	

VM-2000 Series Microphones and Optional Accessories

Remote Microphone

RM-200M

- Up to four remote microphones can be connected but the maximum connection length for all cables is approximately 800 meters
- Emergency activation button is equipped with a cover in case of accidental selection
- *See spec chart on page 100*

Remote Microphone Extension Unit

RM-210

- Up to four can be connected to a remote microphone for up to 50 zone selection buttons
- Emergency activation button is equipped with a cover
- *See spec chart on page 100*

Voice Announcement Board

EV-200M

- Single source playback
- 8 playback programs

Surveillance Board

SV-200MA

- Permits monitoring of individual speaker line or power amplifier failures for status indication

Memory Card

EV-CF64 Q**

- CompactFlash memory card 64MB for EV-200

MB-36

Mounting Bracket

Input Transformer

IT-450**

Speakers for Voice Evacuation and Mass Notification

- BS-680U
- F-122CU2, F-2852CU2, F-2322CU2, F-2352CU2
- PC-580RU, PC-580RVU *(when used with HY-BC580U back can)*
- PE-304BU, PE-304WU, PE-604BU, PE-604WU
- SC-630TU

(Product details and specifications can be found on page 54.)
(Product details and specifications can be found on page 58.)
(Product details and specifications can be found on page 50.)
(Product details and specifications can be found on page 55.)
(Product details and specifications can be found on page 52.)

** Special Order Product

Optional Accessories - Microphones and Conference Systems

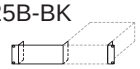
Product Series	Model	Series Picture	Optional Accessories
UHF Wireless Microphone Systems	WT-5800		MB-WT3, MB-WT4, WD-4800, YW-4500, WTU-4800 *(for WT-4820)*
	WT-5805		
	WT-4820		
	WM-5325		Q-EM-77, WH-4000H, WH-4000A, WH-4000P, YP-M5300, YP-M5310
	Headset Microphones	*(WM-5325H, WM-5325A)*	WH-4000S
	WD-4800 *(for WT-4800, WT-5805, WT-4820, S5 Series)*		MB-15B
(Series on page 9)			
Infrared Wireless Microphone System	IR-200M		YP-M101 *(for use with IR-300/310)*, IR-200BT-2, IR-310BC *(for IR-310M only)*
	IR-300M		
	IR-310M		
	IR-700D		YW-1022Y for IR-700D, YW-1024Y for IR-700D, MB-WT3, MB-WT4
	IR-702T *(MB-WT3, MB-WT4 only)*		
(Series on page 16)			
Boundary Microphone *(Series on page 3)*	EM-800		ST-800
Conference Systems *(Series on page 74)*	TS-770		YR-770-2M / YR-770-10M
Infrared Conference Systems	TS-800 UL / TS-910 UL	TS-800/910	MB-TS900, AD-0910UL, BP-900UL
	TS-801; TS-811	TS-811	
	TS-802; TS-812	TS-812	TS-903, TS-904
	TS-901; TS-911	TS-911	
	TS-902; TS-912	TS-912	TS-918, TS-919 B1, TS-919 B4
	TS-905 / TS-907	TS-905 TS-907	YW-1022Y, YW-1024Y
(Series on page 70)			

Please see the Wireless Microphone Selection Guide on page 6. Wireless Microphone Ordering Information is on page 5)

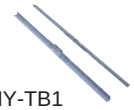
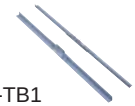
Optional Accessories - Rack Mount Equip., Network Audio...

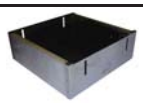
Product Series	Model	Series Picture	Optional Accessories
Network Audio *(Series on page 21)*	NX-100, NX-100S		MB-15B-J AD-246 MB-15B-BK
Program Timer *(Series on page 19)*	TT-104B		MB-15B
Digital Message Repeater *(Series on page 20)*	EV-20R		MB-WT3 MB-WT4 AD-246
AM/FM Synthesized Tuner *(Series on page 20)*	DT-930 UL		MB-15B
Megaphone *(Series on page 76)*	ER-604W		WH-4000H
	ER-1203, ER-1206, ER-1206W, ER-1206S		SP-1100

Optional Accessories - Mixers/Amplifiers

Product Series	Model	Series Picture	Optional Accessories
A-700 Series *(Series on page 46)*	A-706, A-712, A-724		MB-25B IT-450 YA-920 *(included)*
A-900 Series *(Series on page 39)*	A-903MK2, A-906MK2, A-912MK2, M-900MK2		MB-25B YA-920 *(included)*
P-900 Series *(Series on page 40)*	P-906MK2, P-912MK2		MB-25B YA-920 *(included)*
	P-924MK2		MB-35B YA-920 *(included)*
In-Wall Amplifier *(Series on page 41)*	W-906A, W-912A		BX-9F BX-9S WE-2
BG-2000 *(Series on page 47)*	BG-2035, BG-2060, BG-2120		MB-1000 YA-920 *(included)*
BA-200 / BG-200 Series *(Series on page 47)*	BG-220, BG-235		MB-25B-BK  YA-920 *(included)*
	BA-235, BA-260		WB-900B *(BA-200 Series only)* MB-25B-J
DA Series *(Series on page 49)*	DA-250DH, DA-250FH, DA-500F-HL		MT-251H
Micro Amplifier *(Series on page 31)*	AV-20D AV-60S		MB-AV20RM WPB-20 MT-S0301
All Models *(Series on page 21)*	PF-013B Perforated Vent Panel	[All Models]	

Speaker Mounting Accessories

(Series on page 58) / Installation Configurations	Ceiling Speakers - F Series					
	F-122C F-122CU2	**F-1522SC**	**F-2322C F-2322CU2**	**F-2352C F-2352CU2**	**F-2352SC**	**F-2852C F-2852CU2**
Tile Support Rails	 HY-TB1		 HY-TB1		Note: F-2352SC: When using the HY-TB1 the HY-RR2 is required. Supplied with CU2 versions.	
Ceiling Reinforcement Ring	HY-RR2	HY-RR1	HY-RR2			
Trim Ring	HY-TR1		HY-TR1		Note: F-2352SC: When using the HY-TR1 the HY-RR2 is required. Supplied with CU2 versions.	
Black (Suspension) Back Can	HY-BC1		HY-BC1			
White (Suspension) Back Can	Q-HY-BC1W		Q-HY-BC1W			
Shallow Back Can *(Allows the F-2352SC to be plenum rated)*					Q-HY-BC2	
Surface Mount Bracket	HY-AH1		HY-AH1		Note: F-2352SC: When using the HY-AH1 the HY-RR2 is required.	
C2 Version Tile Bridge *(2 pcs/pkg)*	5070723950		5070723950 *(Supplied with CU2 version)*			5070724030
Other Configurations	F-DRYWALLKIT E-03R		F-DRYWALLKIT			

Ceiling Speakers / (Series on page 50) / Installation Configurations	PC-580RU / PC-580RVU	PC-580S
Flush Mount Back Box	HY-BC580U	 Q-BB-580S
Back Box	BB-580	Q-BB580W
Mounting Channel	Q-HY-TB2	

Speaker Mounting Accessories

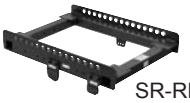
Speakers / Installation Configurations *(Series on page 57)*	Wide-Dispersion Box Speakers			
	F-1000BT F-1300BT	F-1000WT F-1300WT	F-1000BTWP F-1300BTWP	F-1000WTWP F-1300WTWP
Cluster Bracket	HY-CL10B			
Ceiling Mounting Bracket	HY-CM10B	HY-CM10W	HY-CM10B	HY-CM10W
Board Hanger Bracket	HY-BH10B			

Speakers / Installation Configurations *(Series on page 57)*	Wide-Dispersion Box Speakers			
	F-2000BT	F-2000WT	F-2000BTWP	F-2000WTWP
Cluster Bracket	HY-CL20B			
Ceiling Mounting Bracket	HY-CM20B	HY-CM20W	HY-CM20B	HY-CM20W

Horn Speakers		
Installation Configurations	SC-615/SC-615T; SC-630/SC-630T/ SC-630TU; SC-651 *(Series on page 52)*	TH-660 *(Series on page 53)*
Swivel Bracket	YS-151S	

Speaker Mounting Accessories

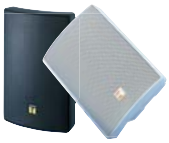
Speakers / Installation Configurations	Line Array Speakers Type A
(Series on page 61)	Indoor Use SR-A12L/SR-A12S/SR-A18B Outdoor Use SR-A12LWP/SR-A12SWP
Rigging Frame	 SR-RF12 SR-RF12WP
Tilt Joint Plate	 SR-TP12

Speakers / Installation Configurations	Line Array Speakers Type C	
(Series on page 62)	Indoor Use SR-C8L/SR-C8S/SR-C15B 	Outdoor Use SR-C8LWP / SR-C8SWP / SR-C15BWP
Rigging Frame	 SR-RF8	 SR-RF8WP
Cluster Bracket	 SR-CL8	
Rigging Support Bracket	 SR-SB8	
Tilt Joint Plate	 SR-TP8	

Speaker Mounting Accessories

Speakers / (Series on page 63)	Line Array Speakers Type D	
	SR-D8-M	SR-D8-S
Installation Configurations		
Extension Plate	SR-D8EP	
Fixing Bar	SR-D8FB	
Hoisting Bracket	SR-D8HB	
Wall Mount Adapters	SR-D8CL SR-D8CS SR-D8WB	

Speakers / (Series on page 64)	Line Array Speakers Type H			
	SR-H2L	SR-H2S	SR-H3L	SR-H3S
Installation Configurations				
Extension Plate	SR-EP3		SR-EP3	
Wall Mount Bracket	SR-WB3			
Wall Tilt Mount Bracket	SR-TB3			
Flying Bracket	SR-FB3			
Speaker Stand Adapter Matching Transformer	SR-SA3 Speaker Stand Adapter MT-S0301 Matching Transformer			

Speakers / (Series on page 54)	Surface Speakers
	BS-1030B BS-1030W
Installation Configurations	
Ceiling Mounting Bracket	SP-410
Wall Mounting Bracket	SP-420
Wall / Ceiling Mount Bracket	WCB-13B/W**

Speakers / (Series on page 65)	Line Array Speakers Type T
	SR-T5
Installation Configurations	
Wall Pan Bracket	SR-PB5
Matching Transformer	MT-S0601

Speaker Mounting Accessories

Speakers (Series on page 64) / Installation Configurations	Line Array Speakers Type S			
	SR-S4L	**SR-S4LWP**	**SR-S4S**	**SR-S4SWP**
Extension Plate	SR-EP4	SR-EP4WP	SR-EP4	SR-EP4WP
Wall Tilt Bracket	SR-TB4	SR-TB4WP	SR-TB4	SR-TB4WP
Wall Mounting Bracket	SR-WB4	SR-WB4WP	SR-WB4	SR-WB4WP
Stand Adapter	SR-SA4			
Flying Bracket	SR-FB4			
Floor Stand	SR-FS4			
Protection Pad	SR-PP4			
Matching Transformer	MT-S0601			

Speakers (Series on page 56) / Installation Configurations	Interior Design Speakers			
	H-1 EX	**H-2 EX** **H-2WP EX**	**H-3 EX** **H-3 WP EX**	**HB-1**
Ceiling Mount Bracket **Matching Transformer**	**Ceiling Mount Bracket** HY-H1			**Matching Transformer** MT-S0601
Optional EQ Modules	E-04R	E-05R	E-06RB	E-07R

Speaker Mounting Accessories

Speakers / Installation Configurations	Compact Array Speakers (HX-5 Series)					
(Series on page 65)	**HX-5B**	**HX-5W**	**HX-5B-WP**	**HX-5W-WP**	**FB-120B**	**FB-120W**
Rigging Frame	HY-PF1B	HY-PF1W	HY-PF1WP		HY-PF1B	HY-PF1W
Ceiling Mounting Bracket	HY-CW1B	HY-CW1W	HY-CW1WP		**Low-Pass Filter Module**	
Mounting Bracket	HY-WM1B HY-WM2B	HY-WM1W HY-WM2W	HY-WM1WP	HY-WM2WP		
Extension Bracket	HY-CN1B	HY-CN1W	HY-CN1B-WP	HY-CN1W-WP		
Speaker Stand Adapter	HY-ST1					
Matching Transformer	MT-200				MT-S0601	

Speakers / Installation Configurations	Coaxial Array Speakers			
(Series on page 68)	**HS-1200BT**	**HS-1200WT**	**HS-1500BT**	**HS-1500WT**
Wall/Ceiling Mount Bracket **Vertical Installation**	HY-1200VB	HY-1200VW	HY-1500VB	HY-1500VW
Wall/Ceiling Mount Bracket **Horizontal Installation**	HY-1200HB	HY-1200HW	HY-1500HB	HY-1500HW
Ceiling Mount Bracket	HY-C0801		HY-C0801W	
Wall Mount Bracket	HY-W0801		HY-W0801W	

Speaker Mounting Accessories

Speakers / Installation Configurations (Series on page 65)	Compact Array Speakers (HX-7 Series)					
	HX-7B	HX-7W	HX-7B-WP	HX-7W-WP	FB-150B	FB-150W
Rigging Frame	HY-PF7B	HY-PF7W			HY-PF1B	HY-PF1W
Rigging Bracket	HY-VM7B	HY-VM7W	HY-TM7BWP	HY-TM7WWP	**Low-Pass Filter Module** E-07S	
Wall Mounting Bracket	HY-WM7B *(HY-VM7B required)*	HY-WM7W *(HY-VM7W required)*	HY-MS7BWP	HY-MS7WWP		
Ceiling Mount Bracket	HY-C0801 *(HY-VM7B required)*	HY-C0801W *(HY-VM7W required)*				
Speaker Connection Bracket	HY-CN7B-WP	HY-CN7W-WP	HY-CN7B-WP	HY-CN7W-WP		
Angle Adjustment Bar *(3 pieces required for 60° mode adjustment)*	HY-60DB-WP	HY-60DW-WP	HY-60DB-WP	HY-60DW-WP		
Speaker Stand Adapter	HY-ST7					
Matching Transformer	MT-200	Matching Transformer Adapter HY-MT7			MT-S0601	

Amplifier Selection Guide

Model Number	Power	Inputs				Outputs							Rack Ears	Page
		Mic	Aux	Tel	Module	70V	25V	Record/ Bridge/ Line	Pre-Amp	4 ohm	8 ohm	MOH		
A-2060 CU	60W	2	2	1		Yes	Yes	Yes		Yes			No	32
A-2120 CU	120W													
A-2240 CU	240W													
A-706	60W	6 (Mic or Line)	2	1*	1 (900 Series)	Yes	Yes	Yes	Yes	Yes		Optional	Optional	46
A-712	120W													
A-724	240W													
A-903MK2	30W	8 module slots			8 (900 series)	Yes	Yes	Yes	Yes	Yes	Yes	Optional	Optional	39
A-906MK2	60W													
A-912MK2	120W													
A-9060DHM2	60W x 2	8 module slots			8 (9000 Series)	Yes	Yes	3 dual module slots	Yes	Yes	Yes	Yes	Yes	34
A-9120DHM2	120W x 2													
A-9060SM2	60W x 2						Yes			Yes	Yes			
A-9120DSM2	120W x 2						Yes			Yes	Yes			
A-9240SHM2	240W													
AV-20D	20W x 2		3					Yes		Yes				31
AV-60S	60W					Yes								
BA-235	35W		1			Yes	Yes	Yes		Yes			Optional	48
BA-260	60W													
BG-220	20W	1	2 (3)**			Yes	Yes	Yes		Yes		Yes	Optional	48
BG-235	35W													
BG-2035	35W	1	2 (3)**	1	1 (900 Series)	Yes	Yes	Yes		Yes		Yes	Optional	47
BG-2060	60W													
BG-2120	120W													
CA-115	15W	2	1							Yes	Yes		No	32
CA-130	30W													
CA-160	60W x 2													
DA-250F	See DA power output chart below		4							Yes	Yes		Yes	49
DA-250FH			4			Yes								
DA-250D			2							Yes	Yes			
DA-250DH			2			Yes								
DA-500F-HL			4			Yes				Yes	Yes			
DA-550F			4							Yes	Yes			
P-906MK2	60W		1		1 (900 Series)	Yes	Yes			Yes	Yes	Optional	Optional	40
P-912MK2	120W													
P-924MK2	240W													
P-9060DH	60W x 2		2			Yes							Yes	35
P-9120DH	120W x 2													
W-906A	60W	6 module slots			6 (900 series)	Yes	Yes	Yes		Yes	Yes	Optional	No	41
W-912A	120W													

*Transformer-Isolation for Telephone Paging Applications (Input #1)
** Selectable

DA AMPLIFIER POWER OUTPUT CHART	
MODEL	**POWER OUTPUT**
DA-250D	2x 250W (4 ohms) 2x 170W (8 ohms) 1x 500W bridged (8 ohms)
DA-250DH	2x 250W (70V) 1x 500W bridged (140V)
DA-250F	4x 250W (4 ohms) 4x 170W (8 ohms) 2x 500W bridged (8 ohms)
DA-250FH	4x 250W (70V) 2x 500W bridged (140V)
DA-500F-HL	4x 500W (70V) 2x 1000W bridged (140V) 4x 550W (8 ohm) 4x 100W (4 ohms) 2x 1100W (16 ohms)
DA-550F	4x 550W (4 ohms) 4x 350W (8 ohms) 2x 1100W bridged (8 ohms)

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CANADIAN INSTALLATIONS

Corporate & Commercial

- R.E.A.C.H. Equestrian Centre, Clinton, ON
- Toronto Board of Trade, Toronto, ON
- Bearspaw and Glenmore Water Treatment Plant, Calgary, AB
- Loblaw's Warehouse, ON
- Nova Scotia Government Union, NS

Correctional Facilities

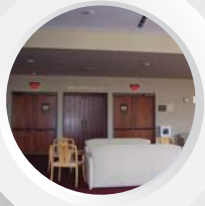
- GV1W Detention Centre, ON
- Edmonton Remand Centre, Edmonton, AB
- Maple Hurst Correctional Facility, Milton, ON
- Milner Ridge Correctional Centre, Beausejour, MB
- Calgary Correctional Centre, Calgary, AB

Education

- Charles P. Allen High School, Bedford, NS
- CSDECSO Board Rooms, French Language School Board, Windsor, ON
- Sault College Student Center, Sault St. Marie, ON
- Bleuets School Board, Saint-Félicien, QC
- St. Thomas School, Lloydminster, AB

Government and Hospitals

- Dr. Everett Chalmers Regional Hospital, Fredericton, NB
- High River Council Chambers, High River, AB
- Guelph Hospital, Kidney Clinic, ON
- Regional Municipality of Durham, ON
- St-John's Long Term Care Facilities, St-John's, NL
- St. Andrews Biological Station, St. Andrews, NB



Halls and Theaters

- Stratford Shakespeare Festival, Stratford, ON
- Fort Calgary Preservation Society, Calgary, AB
- Jubilations Dinner Theatre, Edmonton and Calgary, AB

Hospitality and Retail

- Toronto Premium Outlets, Halton Hills, ON
- Thrifty Foods, British Columbia
- IKEA, Edmonton, AB
- Bier Market, Montreal, QC
- Shediac Hotel, St. James Gate Restaurant, Shediac, NB

Houses of Worship

- First Baptist Church, Halifax, NS
- West Toronto Church of God, Toronto, ON
- Moose Jaw Alliance Church, Moose Jaw, SK
- Assiniboia Alliance, Assiniboia, SK
- Hebron Presbyterian Church, Langley, BC

Intercom

- Newmarket Courthouse, Newmarket, ON
- Ste-Justine Hospital, Montreal, QC
- Rolls Royce Canada, Montreal, QC
- Royal Military College of Canada, Kingston, ON
- Hamilton Port Authority, Hamilton, ON

Sports Complexes

- O'Keefe Arena, Fredericton, NB
- Port Stanley Arena, Port Stanley, ON
- Grant Harvey Arena, Fredericton, NB
- Anzac Arena, Fort McMurray, AB
- Dorval Pool Plex, Dorval, QC

Transportation

- Port of Saint John, Cruise Ship Terminal, Saint John, NB
- Northumberland Ferries Ltd., NS
- Forbes Waterloo Toyota, Waterloo, ON
- BMW Dealership, QC
- Charlottetown Airport, Charlottetown, PEI

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